



# DOE, RFO Environmental Restoration Program

Monthly Report  
for March 1994



April 20, 1994

DOCUMENT CLASSIFICATION  
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**EXECUTIVE SUMMARY****SIGNIFICANT ACTIVITIES AND ACHIEVEMENTS FOR MARCH 1994**

EPA and CDH granted an extension to the IAG Table 6 milestones for Operable Unit (OU) 1. Good cause was established for the extension based on the need of OU 1 to incorporate recent efforts to develop a consistent, programmatic approach for conducting Corrective Measures Studies/Feasibility Studies (CMS/FS) across all OUs at Rocky Flats (RF). The following extensions to the IAG have been granted on OU 1 milestones:

| <u>Deliverable</u>     | <u>Revised Milestone Delivery Date</u> |
|------------------------|--|
| Draft CMS/FS           | August 25, 1994                        |
| Final CMS/FS           | November 22, 1994                      |
| Draft Proposal Plan    | November 22, 1994                      |
| Final PP               | February 24, 1994                      |
| Responsiveness Summary | June 23, 1995                          |
| Final RS               | September 22, 1995                     |
| Draft CAD/ROD          | September 22, 1995                     |
| Final CAD/ROD          | December 22, 1995                      |

The background data issue for OU 3, Offsite Areas, has been resolved. A presentation of the background soils study was given to the regulatory agencies. This study is in response to several earlier requests by the regulators to provide a more defensible background data set for surficial soils. The presentation included some statistical analyses that have already been conducted regarding the Rock Creek data set. The issue regarding this data was that sufficient evidence that the Rock Creek data set was truly representative of background was never provided. The preliminary results indicate that the data set is appropriate for uranium and metals. Plutonium and americium are still in question.

Vacuuming of the 207B South Pond in OU 4 continued during March 1994. To date, about 210,000 gallons of sludge have been transferred into fifteen tanks in Tents Three and Four as a result of 124 vacuuming runs. Vacuuming continued in the southwest corner of the pond.

On March 8, 1994, revised and rescoped project plans were submitted to EPA and CDH for OUs 7 and 11. Both proposals combine the Phase I and Phase II RFI/RI investigations, extend the Phase I milestones, but delete the Phase II milestones, thus streamlining the projects. DOE is waiting for approval of the proposed plan. A proposal to move Individual Hazardous Substance Sites (IHSSs) 166.1, 166.2, 166.3, and 167.1 from OU 6 to OU 7 was also included in the memorandum.

A meeting was held on March 3, 1994, with the EPA, CDH, DOE, and EG&G to discuss the public comments on the OU 16 Proposed Plan (PP) and also the preliminary Responsiveness Summary (RS) to Public Comments. The objective is to obtain agreement as to what the public comments actually entail and to expedite the response process. The preparation of the No Action Justification (NAJ) Record of Decision (ROD) has been completed in draft. This action will close OU 16 at RF.

The Industrial Area (IA) Integrated OUs (8, 9, 10, 12, 13, and 14) IHSSs evaluation summary was completed and reviewed at the Environmental Restoration (ER) Accelerated Clean Up Working Group on March 10, 1993. The summary of the IHSSs evaluation resulted in the development of a plan that was received by DOE on March 16, 1993.

The IA Interim Measure/Interim Remedial Action Plan (IM/IRAP) draft IA IM/IRA/Decision Document (DD) was received by the agencies on March 15, 1994. This submittal satisfies the first of four IAG milestones for this project.

The final Annual Report for the Treatability Studies Program FY93 was delivered to CDH and EPA on March 14, 1994, the IAG deliverable date.

Informal agreement was reached between EPA, CDH, and DOE on data aggregation for baseline risk assessment exposure calculations, the final unresolved issue from the August 12, 1993, Baseline Risk Assessment stop work order. The data aggregation methodology was formally transmitted to EPA and CDH on March 28, 1994, along with a letter requesting written approval of the methodology. In a separate letter to EPA and CDH, DOE will request that 6-weeks be allowed to assess the OU schedule and cost impacts of the increased scope resulting from the revised risk assessment methodology. EG&G will be directed to review the revised methodology and provide DOE with schedule and cost impacts on the OUs.

**IAG PERFORMANCE INDICATORS FOR MONTHLY REPORT**

| <u>Number of IAG Table Six Milestones to Date</u> | <u>FY94<br/>To Date)</u> | <u>Since IAG Inception</u> |
|---|--------------------------|----------------------------|
| Scheduled (including approved extensions)         | 11                       | 108                        |
| Met   | 2                        | 90                         |
| Extensions Granted                                | 8                        | 35                         |
| Extensions Denied                                 | 1                        | 3                          |
| Remaining this FY94 (to 9/30/94)                  | 22                       | n/a                        |
| Added   | 0                        | 5                          |
| Deleted   | 2                        | 5                          |

| <u>Deliverables In Review by Regulators</u> | <u>Project</u>                       | <u>Date Submitted</u> |
|---|--------------------------------------|-----------------------|
|   | OU 2 draft Phase II<br>RFI/RI Report | 16 Dec 93             |

| <u>Field Work Currently Under Way</u>  | <u>Project</u> | <u>Scheduled Complete</u> |
|--|----------------|---------------------------|
| Please note: these dates reflect scheduled<br>field work and completed field work. | OU 2           | 08 Oct 93                 |
|  | OU 3           | 13 Jul 93                 |
|  | OU 4           | Jun 95 <sup>a</sup>       |
|  | OU 7           | 30 Apr 93                 |
|  | OU 10          | 15 Aug 94                 |
|  | OU 12          | 05 Sep 94                 |
|  | OU 13          | 17 Feb 95                 |
|  | OU 14          | 11 May 95                 |
|  | OU 15          | 12 Nov 93                 |

<sup>a</sup> for field work Phases I and II

| <u>IM/IRA Status</u>                             | <u>Gallons Treated</u> |
|--|------------------------|
| OU 1 881 Hillside Treatment                      | 1,896,919 gallons      |
| OU 2 903 Pad Water Treatment                     | 22,730,120 gallons     |
| OU 4 Water Management Tasks (ITS and Pond Water) | 3,008,964 gallons      |

| <u>IAG Document Deliverables Due Next 6 month</u> | <u>Due Date</u> | <u>Expected Date</u> |
|---|-----------------|----------------------|
| OU 1 draft CMS/FS Report                          | 25 Aug 94       | 25 Aug 94*           |
| OU 2 draft Proposed Plan                          | 10 May 94       | 26 Jun 97*           |
| OU 2 final CMS/FS Report                          | 10 May 94       | 26 Jun 97*           |
| OU 2 final Proposed Plan                          | 09 Aug 94       | 13 Jan 98*           |
| OU 2 Subsurface IM/IRA Complete Test I            | 30 May 94       | 30 May 94            |
| OU 2 Subsurface IM/IRA Site II Final Test Plan    | 06 Jul 94       | 06 Jul 94            |
| OU 2 Subsurface IM/IRA Site I Pilot Test Report   | 11 Nov 94       | 11 Nov 94            |
| OU 4 draft Phase I Proposed IM/IRA DD             | 14 Apr 94       | 13 Apr 94            |
| OU 4 draft Phase II RFI/RI Work Plan              | 22 Apr 94       | 26 May 94            |
| OU 4 final Phase I Proposed IM/IRA DD             | 24 Jun 94       | 24 Jun 94            |
| OU 4 final Phase II RFI/RI Work Plan              | 19 Sep 94       | 15 Jul 94            |
| OU 5 final Phase I RFI/RI Report                  | 03 May 94       | 18 Oct 95*           |
| OU 6 draft Phase I RFI/RI Report                  | 10 Jun 94       | 21 Oct 94*           |
| OU 7 draft Phase II RFI/RI Work Plan              | 13 Sep 94       | 07 Aug 95*           |
| OU 8 final Phase I RFI/RI Report                  | 12 Jul 94       | 19 Jul 16            |
| OU 9 draft Phase I RFI/RI Report                  | 11 Apr 94       | 04 Jan 01            |
| OU 9 final Phase I RFI/RI Report                  | 06 Sep 94       | 16 Sep 03            |
| OU 10 draft Phase I RFI/RI Report                 | 25 Aug 94       | 11 Mar 99            |
| OU 12 final Phase I RFI/RI Report                 | 15 Sep 94       | 17 Nov 99            |
| OU 15 draft Phase I RFI/RI Report                 | 01 Aug 94       | 01 Aug 94            |

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| <u>Overdue Deliverables</u>                            | <u>Due Date</u> | <u>Expected Date</u> |
|--|-----------------|----------------------|
| OU 2 draft Phase II RFI/RI Report <sup>a</sup>         | 12 Mar 93       | 16 Dec 93*           |
| OU 2 final Phase II RFI/RI Report                      | 09 Aug 93       | 23 May 94*           |
| OU 7 draft Phase I RFI/RI Report                       | 12 Oct 93       | 21 Jun 94*           |
| OU 2 draft CMS/FS Report                               | 04 Nov 93       | 17 Oct 96*           |
| OU 5 draft Phase I RFI/RI Report                       | 30 Nov 93       | 09 Feb 95*           |
| OU 3 draft Phase I RFI/RI Report                       | 14 Feb 94       | 31 Oct 94*           |
| OU 8 draft Phase I RFI/RI Report                       | 14 Feb 94       | 02 Nov 15            |
| OU 7 final Phase I RFI/RI Report                       | 16 Mar 94       | 02 Sep 94*           |
| OU 13 draft Phase I RFI/RI Report                      | 08 Aug 94       | 24 Mar 99            |
| SW Submit Industrial Area draft Responsiveness Summary | 02 Aug 94       | 02 Aug 94            |
| SW Submit Industrial Area final Responsiveness Summary | 23 Aug 94       | 23 Aug 94            |
| SW Submit Industrial Area final Decision Document      | 23 Aug 94       | 23 Aug 94            |

\* Completion date to be rescheduled because of HHRA issues work stoppage.

<sup>a</sup> Partial delivery, because of the HHRA issues work stoppage.

### PROBLEMS AND PROGRAMMATIC ISSUES

The new schedule for review of the OU 4 (Interim Measure/Interim Remedial Action) IM/IRA Environmental Assessment Decision Document (DD) was presented to the regulatory agencies during the Roundtable Review meeting of March 15, 1994. This new schedule was made necessary by requests for extended review time by CDH and DOE. The schedule indicated that an extension of the review period of 36 days would be required. In the meeting, CDH requested a further extension of seven days, but this request was not supported by EPA. It was decided that the duration of extension must be negotiated between the two regulatory agencies. CDH, EPA, DOE, and EG&G communicated on March 16, 1994, to learn of the agencies' decision, but the communication was terminated by CDH upon determination that the appropriate managers had not yet conferred. This disagreement as to the length of the extension period has delayed submittal by DOE of a formal request for an IAG milestone extension and thereby inhibits efforts to mitigate the position of vulnerability in which DOE and EG&G find themselves since the existing IAG milestones cannot now be met.

The Dispute Resolution Committee held its second meeting on March 3, 1994, concerning the Pond Water IM/IRA. There was some agreement on technical issues and potential solutions; however, jurisdictional issues still remain in dispute. The Dispute Resolution Committee was unable to unanimously resolve the dispute by March 11, 1994, so a Written Statement of Dispute and joint statement was forwarded along with supporting information to the Senior Executive Committee for resolution. The Senior Executive Committee will serve as the forum for resolution of disputes where agreement has not been reached by the Dispute Resolution Committee. The Senior Executive Committee members shall as appropriate, confer, meet, and exert their best efforts to resolve the dispute and issue a written decision. If unanimous resolution of the dispute is not reached within 21 days (April 1, 1994), EPA's Regional Administrator will issue a written position on the dispute.

On March 1, 1994, DOE sent a Statement of Dispute to the regulatory agencies regarding the OU 8 Interagency Agreement (IAG) violation for missing the Phase I RFI/RI Report. The purpose of the Statement of Dispute was to initiate the dispute resolution process under the IAG with both the agencies. DOE and the agencies had 14 days from the issuance of the Statement of Dispute to attempt to resolve the issue informally. On March 14, 1994, DOE requested that the CDH and the EPA grant a 3-week extension of the informal discussion process past the initial 14 days allowed in the IAG. If the agencies accept DOE's request for an extension of the informal discussions and if the OU 8 dispute remains unresolved, they must respond formally to DOE with a notice of objections by April 4, 1994.

No response has been received from the regulatory agencies on the DOE request for an extension on the milestones for the OU 9 draft and final RFI/RI Reports due April 11, 1994, and September 6, 1994, respectively.

NEAR-TERM IAG TABLE SIX MILESTONES

| <u>OU#</u>     | <u>IAG<br/>Milestone Description</u>                          | <u>Date Scheduled<br/>to EPA/CDH</u> | <u>Status</u>                   |
|----------------|---|--------------------------------------|---------------------------------|
| 2 <sup>a</sup> | Submit draft Phase II RFI/RI Report                           | 12 Mar 93                            | Extension denied(delinquent)    |
| 2 <sup>a</sup> | Submit final Phase II RFI/RI Report                           | 9 Aug 93                             | Extension denied(delinquent)    |
| 7 <sup>a</sup> | Submit draft Phase I RFI/RI Report                            | 12 Oct 93                            | *                               |
| 2 <sup>a</sup> | Submit draft CMS/FS Report                                    | 04 Nov 93                            | *                               |
| 1              | Submit final Phase III RFI/RI Report                          | 30 Mar 94                            | Extended from 04 Jan 93         |
| 5 <sup>a</sup> | Submit draft Phase I RFI/RI Report                            | 30 Nov 93                            | *                               |
| 3 <sup>a</sup> | Submit draft Phase I RFI/RI Report                            | 14 Feb 94                            | *                               |
| 8              | Submit draft Phase I RFI/RI Report                            | 14 Feb 94                            | Extension denied(NOV submitted) |
| 7 <sup>a</sup> | Submit final Phase I RFI/RI Report                            | 16 Mar 94                            | *                               |
| SW             | Submit draft IA/IM/IRA Decision Document                      | 23 Mar 94                            | 23 Mar 94                       |
| 9              | Submit draft Phase I RFI/RI Report                            | 11 Apr 94                            | Extension request submitted     |
| 4              | Submit draft Phase I Proposed IM/IRA<br>Decision Document     | 14 Apr 94                            | On schedule                     |
| 12             | Submit draft Phase I RFI/RI Report                            | 20 Apr 94                            | Extension request submitted     |
| 4              | Submit draft Phase II Work Plan                               | 22 Apr 94                            | On schedule                     |
| 5 <sup>a</sup> | Submit final Phase I RFI/RI Report                            | 03 May 94                            | Extension request submitted     |
| 1              | Submit draft Responsiveness Summary                           | 06 May 94                            | *                               |
| 2 <sup>a</sup> | Submit final CMS/FS Report                                    | 10 May 94                            | *                               |
| 2 <sup>a</sup> | Submit draft Proposed Plan                                    | 10 May 94                            | *                               |
| 2              | Submit Subsurface IM/IRA Complete Test I                      | 30 May 94                            | 30 May 94                       |
| 6 <sup>a</sup> | Submit draft Phase I RFI/RI Report                            | 10 Jun 94                            | Extended from 4 Aug 93          |
| 4              | Submit final Phase I Proposed IM/IRA<br>Decision Document     | 24 Jun 94                            | On schedule                     |
| 2              | Submit Subsurface IM/IRA Site 2 Final Test<br>Plan            | 06 Jul 94                            | 06 Jul 94                       |
| 8              | Submit final Phase I RFI/RI Report                            | 12 Jul 94                            | Extension request submitted     |
| 15             | Submit draft Phase I RFI/RI Report                            | 01 Aug 94                            | On schedule                     |
| SW             | Submit Industrial Area draft IM/RAP<br>Responsiveness Summary | 02 Aug 94                            | 02 Aug 94                       |
| 1              | Submit final CMS/FS Report                                    | 03 Aug 94                            | *                               |
| 1              | Submit final Responsiveness Summary                           | 03 Aug 94                            | *                               |
| 1              | Submit draft CAD/ROD  | 03 Aug 94                            | *                               |
| 13             | Submit draft Phase I RFI/RI Report                            | 08 Aug 94                            | *                               |
| 2 <sup>a</sup> | Submit final Proposed Plan                                    | 09 Aug 94                            | *                               |
| SW             | Submit IA final IM/RAP<br>Responsiveness Summary              | 23 Aug 94                            | 23 Aug 94                       |
| SW             | Submit Industrial Area IM/IRA final<br>Decision Document      | 23 Aug 94                            | 23 Aug 94                       |
| 10             | Submit draft Phase I RFI/RI Report                            | 25 Aug 94                            | Extension request submitted     |
| 1              | Submit draft CMS/FS Report                                    | 25 Aug 94                            | Extended from 11 Feb 94         |
| 9              | Submit final Phase I RFI/RI Report                            | 06 Sep 94                            | Extension request submitted     |
| 7 <sup>a</sup> | Submit draft Phase II RFI/RI Work Plan                        | 13 Sep 94                            | *                               |
| 12             | Submit final Phase I RFI/RI Report                            | 15 Sep 94                            | Extension request submitted     |
| 4              | Submit final Phase II RFI/RI Work Plan                        | 19 Sep 94                            | On schedule                     |
| 11             | Submit draft Phase I RFI/RI Report                            | 20 Sep 94                            | *                               |
| 3 <sup>a</sup> | Submit final Phase I RFI/RI Report                            | 21 Oct 94                            | Extended from 13 Dec 93         |
| 1              | Submit final CAD/ROD  | 01 Nov 94                            |                                 |

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| <u>OU#</u>     | <u>IAG</u><br><u>Milestone Description</u>  | <u>Date Scheduled</u><br><u>to EPA/CDH</u> | <u>Status</u>               |
|----------------|---|--|-----------------------------|
| 1              | Submit CD/RD Work Plan                      | 01 Nov 94                                  |                             |
| 7 <sup>a</sup> | Submit draft Phase I Proposed IM/IRA DD     | 01 Nov 94                                  | *                           |
| 2              | Submit IM/IRA Site I Pilot Test Report      | 11 Nov 94                                  | 11 Nov 94                   |
| 1              | Submit draft Proposed Plan                  | 22 Nov 94                                  | Extended from 27 Sep 93     |
| 6 <sup>a</sup> | Submit final Phase I RFI/RI Report          | 18 Nov 94                                  | Extended from 07 Jan 94     |
| 2 <sup>a</sup> | Submit Responsiveness Summary               | 13 Dec 94                                  |                             |
| 14             | Submit draft Phase I RFI/RI Report          | 20 Dec 94                                  | *                           |
| 15             | final Phase I RFI/RI Report                 | 04 Jan 95                                  | On schedule                 |
| 13             | final Phase I RFI/RI Report                 | 11 Jan 95                                  | 02 Dec 99                   |
| 4              | All Solar Ponds Emptied of Water and Sludge | 20 Jan 95                                  | Ahead of Schedule           |
| 4              | IM/IRA Responsiveness Summary               | 25 Jan 95                                  | 01 Nov 94                   |
| 10             | final Phase I RFI/RI Report                 | 30 Jan 95                                  | Extension Request Submitted |
| 11             | final Phase I RFI/RI Report                 | 22 Feb 95                                  | 03 Jan 96                   |
| 13             | final Phase I RFI/RI Report                 | 11 Jan 95                                  | 02 Dec 99                   |
| 7              | final Phase II RFI/RI Work Plan             | 15 Feb 95                                  | *                           |
| 1              | Submit final Proposed Plan                  | 24 Feb 95                                  | Extended from 04 Jan 94     |
| 2              | Submit final Responsiveness Summary         | 16 Mar 95                                  | 17 Nov 97                   |
| 2              | Submit draft CAD/ROD                        | 16 Mar 95                                  | 17 Feb 97                   |
| 9              | Submit draft Phase II RFI/RI Work Plan      | 10 Mar 95                                  | 10 Sep 98                   |

\* Behind original IAG schedule; extension required.

<sup>a</sup> OU 2 through OU 7 may require additional extensions because of HHRA issues work stoppage.

## **SECTION 1. INTRODUCTION**

This monthly status report presents the current status and technical achievements of the Rocky Flats Environmental Restoration Program for March 1994. This program implements the Interagency Agreement (IAG) among the U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency (EPA), and the State of Colorado to investigate, assess, and remediate, where necessary, contaminated areas at or adjacent to DOE's Rocky Flats site in Golden, Colorado. This agreement was signed on January 22, 1991. The work is being performed for DOE by EG&G Rocky Flats, Inc.

The Executive Summary of the report highlights significant achievements, summarizes milestone information, and presents any major unresolved issues of the program. Technical progress, schedule status, and milestone status for each OU as well as other program activities are presented in Section 2. Section 3. contains the schedules for routine environmental sampling as required by Paragraph 210 of the IAG. Section 4. contains a list that identifies the contractors and subcontractors performing work on the program as required by Paragraph 13 of the IAG.

## SECTION 2. PROJECT STATUS

### 2.1 OU 1 - 881 HILLSIDE AREA

The alluvial ground water at the 881 Hillside Area, located north of Woman Creek in the southeast section of Rocky Flats (RF), was contaminated in the 1960s and 1970s with solvents and radionuclides. The area is approximately 2 miles from the eastern, outer edge of the plant's buffer zone at Indiana Street. The various Individual Hazardous Substance Sites (IHSSs) that make up OU 1 were being investigated and treated as high-priority sites because of potentially elevated concentrations of organic compounds in the near-surface ground water and the proximity of the contamination to a drainage system leading to an offsite drinking water supply. The selected Interim Remedial Action (IRA) at OU 1 involved construction of an underground drainage system called a French drain that intercepts and contains near-surface ground water flowing from the OU 1 area. Water is also collected from the 881 Building footing drain and a collection well. The near-surface water is treated at the 891 treatment facility, designed for this purpose, and released onsite into the South Interceptor Ditch (SID) along Woman Creek. Water collected from this ditch undergoes a secondary analysis prior to release. IRA construction was completed in April 1992. The Remedial Investigation and Feasibility Study (RI/FS) to determine the final remedial action are continuing in parallel with operation of the IRA.

#### 2.1.1 OU 1 ASSESSMENT

Scope of Work Changes This Period      None

Technical Approach Changes This Period      None

|                                      |   |           |
|--------------------------------------|---|-----------|
| <b>IAG Milestone Accomplishments</b> | Submit draft Phase III RFI/RI Work Plan | 06 Feb 90 |
|                                      | Submit final Phase III RFI/RI Work Plan | 30 Oct 90 |
|                                      | Submit draft Phase III RFI/RI Report    | 28 Oct 92 |
|                                      | Submit final Phase III RFI/RI Report    | 15 Nov 93 |

#### **Future IAG Milestones Through FY95**

| <u>Milestone Name</u>               | <u>IAG Date Scheduled</u> | <u>Extension Status</u> | <u>Planned Accomplishment Date</u> |
|-------------------------------------|---------------------------|-------------------------|------------------------------------|
| Submit draft CMS/FS Report          | 25 Aug 94                 | 25 Aug 94               | 25 Aug 94                          |
| Submit final CMS/FS Report          | 27 Sep 93                 | 22 Nov 94               | 22 Nov 94                          |
| Submit draft PP                     | 27 Sep 93                 | 22 Nov 94               | 22 Nov 94                          |
| Submit final PP                     | 04 Jan 94                 | 24 Feb 95               | 24 Feb 94                          |
| Submit draft Responsiveness Summary | 06 May 94                 | 23 Jun 95               | 23 Jun 95                          |
| Submit final Responsiveness Summary | 03 Aug 94                 | 22 Sep 95               | 22 Sep 95                          |
| Submit draft CAD/ROD                | 03 Aug 94                 | 22 Sep 95               | 22 Sep 95                          |
| Submit final CAD/ROD                | 01 Nov 94                 | 22 Dec 95               | 22 Sep 95                          |
| Submit draft Title II Design        | 05 Jul 95                 |                         | 17 Oct 97                          |

**March Work Activity  
Status**

**Remedial Investigation (RI)** - EPA requested in its comments on the Phase III Report the addition of antimony and manganese as site contaminants. Discussions were held among the regulatory agencies and DOE to see if a compromise could be reached on this matter. EPA and CDH asked if these chemicals would drop out of the Gilbert Screens for Contaminants of Concern (COCs), which have been developed for use in OUs 2 through 7. Statistical calculations were performed to make this determination. The statistical tests show that the difference between background and OU 1 metals concentrations are in some cases "statistically significant." In these cases, the Gilbert Method invokes professional judgment concerning spatial and temporal consistency, geochemistry, hydrology, and general science and engineering. DOE has transmitted a letter to the agencies proposing that antimony and manganese be addressed in the "Uncertainty Analysis" as naturally occurring chemicals instead of in the formal Human Health Risk Assessment (HHRA) as "Contaminants." Risk assessment guidance for superfund contains provisions for doing this.

Remedial Investigation Report Environmental Evaluation (EE) comments were received on February 17, 1994, and are being reviewed to assess their overall impact on the final Remedial Investigation (RI) Report.

**Feasibility Study/Corrective Measures Study (FS/CMS)** - Work on Technical Memorandum (TM) #10 will continue with the assumption that antimony and manganese will not be considered as contaminants and not be carried into the FS.

The first draft of TM #11, *Alternative Array*, was received by DOE on March 8, 1994, for review prior to submittal to EPA and CDH.

Technical Memoranda

Project

OU 1 881 Hillside

TM #10

TM Title

TM Status

Preliminary Remediation Goals

Submitted draft TM to DOE: Feb 93

EPA has submitted comments on TM #10. CDH comments were received Feb 94

When preparation was concluded or is estimated to be concluded: 20 Apr 94

Projected date of submittal to EPA/CDH: 22 Apr 94  
(Comments are being incorporated)

Actual date of submittal: N/A

Date when comments were received: N/A

TM #11

TM Title

TM Status

Alternative Array

Submitted draft TM to DOE: 08 Mar 94

When preparation is concluded or is estimated to be concluded: TBD

Projected date of submittal to EPA/CDH: TBD

Actual date of submittal: N/A

Date when comments were received: N/A

**Planned Work for April**

- Resume work on revising the final RFI/RI Report. Specifically, resolve the manganese and antimony issue in the RI.
- Submit as part of the CMS/FS to CDH and EPA the final TM #10, *Remedial Action Objectives*.

**Problems**

None

**Open Items**

None

**2.1.2 OU 1 REMEDIATION**

**Scope of Work Changes  
This Period**

None

**Technical Approach  
Changes This Period**

None

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**IAG Milestone  
Accomplishments**

|   |           |
|---|-----------|
| Submit draft proposed IM/IRA Decision Document          | 18 Sep 89 |
| Submit proposed IM/IRA Decision Document                | 06 Oct 89 |
| Submit final IM/IRA Decision Document                   | 05 Jan 90 |
| Begin Phase I-A IM/IRA Construction                     | 15 Jan 90 |
| Restart Phase I-A IM/IRA Construction (after shutdown)  | 20 Jun 90 |
| Begin Phase I-B IM/IRA Construction (ahead of schedule) | 28 Sep 90 |
| Submit IM/IRA Implementation Document                   | 22 Feb 91 |
| Begin Phase II-A IM/IRA Construction                    | 01 Apr 91 |
| Begin IM/IRA Testing                                    | 05 Aug 91 |
| Begin Phase II-B IM/IRA Construction                    | 03 Sep 91 |
| Complete IM/IRA Construction (891 treatment building)   | 02 Mar 92 |
| Complete IM/IRA Construction (French drain)             | 13 Apr 92 |

**Future IAG Milestones  
Through FY95**

None

**March Work Activity  
Status**

**Interim Measure/Interim Remedial Action Treatment Facility** - DOE received a letter from EPA, stating that the Quarterly Report was "deficient in many respects, as well as being somewhat tardy." These issues are being resolved with EPA and CDH. The next report is scheduled for April 1994.

The gas chromatograph and the chassis of the in-line system were delivered February 25, 1994. Installation, start up, and testing continued through March 1994.

The back pressure valve on the Ion Exchange (IX) acid regeneration system failed, was replaced, and regeneration was completed. Anchors have not yet been received for the stabilization of the footing drain flow meter. Higher volumes of water are beginning to flow into the French drain. Significant water treatment efforts will probably be needed from March 1994 through the end of May 1994.

Concerning the 881 Footing Drain Report (to be used to propose discontinuation of collection), the tables and graphs generated from the Rocky Flats Environmental Database System (RFEDS) are being discussed by DOE and EG&G. The outline and the schedule were finalized. The first draft is being prepared.

Three thousand gallons of Soil Vapor Extraction (SVE) Unit water were treated. Only partial removal of carbon tetrachloride was achieved and the water was pumped back to the influent tanks for slow injection through the system. It appears as though this UV/peroxide unit will not be capable of handling any significant levels of carbon tetrachloride without modification to the system.

Treated ground water this month: 73,829 gallons  
Total treated water: 1,896,919 gallons

**Planned Work for April**

- Continue normal operations.

**Problems**

None

**Open Items**

None

## **2.2 OU 2 - 903 PAD, MOUND, AND EAST TRENCHES**

The contamination at the 903 Pad and Mound areas is largely attributed to the storage in the 1950s and 1960s of waste drums that corroded over time, allowing hazardous and radioactive material to leak into the surrounding soil. Additional contamination may have resulted from wind dispersion during drum removal and soil movement activities. The East Trenches Area was used for disposal of plutonium and uranium contaminated waste and sanitary sewage sludge from 1954 to 1968. Two areas adjacent to the trenches were used for spray irrigation of sewage treatment plant effluent; these areas may have contaminants that were not removed by the treatment system.

An Interim Measure/Interim Remedial Action (IM/IRA) provides for surface water in source areas of contamination to be collected, treated, and discharged to the surface water drainage. Operation of the field-scale treatability unit for the South Walnut Creek drainage began in May 1991. The effectiveness of the treatment process was evaluated at three locations: the influent to the treatment facility, several points within the facility, and the discharge point. The unit is anticipated to remain in service until the final remedial action is operational. The RI and FS are continuing in parallel with the IRA.

A second IM/IRA was established in late 1991. This Subsurface IM/IRA Plan/Environmental Assessment (IM/IRA/EA) encompasses the 903 Pad, the Mound Area, and the East Trenches Area of OU 2. This IM/IRA describes the process to evaluate a remediation technology for removal of residual free-phase Volatile Organic Compound (VOC) contamination at OU 2. The VOC-removal actions involve *in situ* vacuum-enhanced vapor extraction technology. The interim remedial actions will provide information to aid in the selection and design of final remedial actions that address subsurface, residual free-phase VOC contamination at OU 2.

### **2.2.1 OU 2 ASSESSMENT**

|   |  |           |
|---|--|-----------|
| <b>Scope of Work Changes This Period</b>      | None   |           |
| <b>Technical Approach Changes This Period</b> | None   |           |
| <b>IAG Milestone Accomplishments</b>          | Submit draft Phase II RFI/RI Work Plan (Alluvial)  | 21 Dec 89 |
|   | Submit final Phase II RFI/RI Work Plan (Alluvial)  | 12 Apr 90 |
|   | Submit draft Phase II RFI/RI Work Plan (Bedrock)   | 05 Feb 91 |
|   | Submit final Phase II RFI/RI Work Plan (Bedrock)   | 02 Jul 91 |
|   | Submit Field Report for Detailed Soil Vapor Survey | 15 Dec 93 |
|   | Submit preliminary draft Phase II RFI/RI Report    | 16 Dec 93 |

**Future IAG Milestones  
Through FY95**

| <u>Milestone Name</u>                   | <u>IAG Date<br/>Scheduled</u> | <u>Extension<br/>Status</u> | <u>Planned<br/>Accomplishment<br/>Date</u> |
|---|-------------------------------|-----------------------------|--|
| Submit draft Phase II RFI/RI Report     | 12 Mar 93                     | Denied                      | 16 Dec 93*                                 |
| Submit final Phase II RFI/RI Report     | 09 Aug 93                     | Denied                      | 23 May 94*                                 |
| Submit draft CMS/FS Report              | 04 Nov 93                     |                             | 17 Oct 96*                                 |
| Submit final CMS/FS Report              | 10 May 94                     |                             | 26 Jun 97*                                 |
| Submit draft PP                         | 10 May 94                     |                             | 26 Jun 97*                                 |
| Submit final PP                         | 09 Aug 94                     |                             | 13 Jan 98*                                 |
| Submit final Pilot Test Plan Site II    | 30 Aug 94                     |                             | 30 Aug 94                                  |
| Submit final Pilot Test Report Site I   | 27 Oct 94                     |                             | 27 Oct 94                                  |
| Submit draft final Pilot Test Report    | 28 Oct 94                     |                             | 28 Oct 94                                  |
| Submit Responsiveness Summary           | 13 Dec 94                     |                             | 30 Jun 98*                                 |
| Submit final Pilot Test Report          | 20 Dec 94                     |                             | 20 Dec 94                                  |
| Submit draft CAD/ROD                    | 16 Mar 95                     |                             | 02 Dec 98*                                 |
| Submit final Responsive Summary         | 16 Mar 95                     |                             | 02 Dec 98*                                 |
| Submit final CAD/ROD                    | 15 Jun 95                     |                             | 10 Aug 99*                                 |
| Submit CD/RD Work Plan                  | 15 Jun 95                     |                             | 10 Aug 99*                                 |
| Submit final Pilot Test Report Site II  | 01 Sep 95                     |                             | 01 Sep 95                                  |
| Submit final Pilot Test Report Site III | 23 Apr 96                     |                             | 23 Apr 96                                  |

\* TBD due to Human Health Risk Assessment (HHRA) issues work stoppage.

**March Work Activity  
Status**

**Remedial Investigative Report** - CDH comments on the preliminary draft of the Phase II RFI/RI Report are still pending. (Preliminary draft of the RFI/RI Report was submitted December 16, 1993 without risk assessment.)

Comments on TM #9, *Contaminants of Concern*, were received from CDH and DOE/HQ. EPA comments are pending. A meeting was held to discuss options available to go on with the CMS/FS without regulatory agency concurrence on technical COCs.

**Technical Memoranda**

**Project**

**OU 2-903 Pad, Mound, and East Trenches**

TM #5

TM Title

TM Status

Exposure Scenarios

When preparation is concluded or is estimated to be concluded: 15 Jan 93

Projected date of submittal to EPA/CDH: 15 Jan 93

Actual date of submittal: 15 Jan 93

Date when comments were received: 11 Feb 93 EPA,  
12 Mar 93 CDH

|                |   |
|----------------|---|
| TM #6          |   |
| TM Title       | Modeling  |
| TM Status      | When preparation is concluded or is estimated to be concluded: 15 Jan 93<br>Projected date of submittal to EPA/CDH: 15 Jan 93<br>Actual date of submittal: 15 Jan 93<br>Date when comments were received: 01 Apr 93 EPA,<br>31 Mar 93 CDH |
| TM #7          |   |
| TM Title       | Surficial Soils   |
| TM Status      | When preparation is concluded or is estimated to be concluded: 07 Jan 93<br>Projected date of submittal to EPA/CDH: 07 Jan 93<br>Actual date of submittal: 12 Jan 93<br>Date when comments were received: 21 Jan 93<br>TM Approved        |
| TM #8          |   |
| TM Title       | Revised Bedrock Work Plan   |
| TM Status      | When preparation is concluded or is estimated to be concluded: 15 Mar 93<br>Projected date of submittal to EPA/CDH: 01 Mar 93<br>Actual date of submittal: 15 Mar 93<br>Date when comments were received: 14 Apr 93 EPA,<br>14 Apr 93 CDH |
| TM #8 Addendum |   |
| TM Title       | Contingency Plan for revised Phase II RFI/RI Work Plan (Bedrock)  |
| TM Status      | When preparation is concluded or is estimated to be concluded: TBD<br>Projected date of submittal to EPA/CDH: TBD<br>Actual date of submittal: TBD<br>Date when comments are received: TBD  |
| TM #9          |   |
| TM Title       | Chemicals of Concern  |
| TM Status      | When preparation is concluded or is estimate to be concluded: 24 Aug 93<br>Projected date of submittal to EPA/CDH: Unknown due to work stoppage<br>Actual date of submittal: 08 Dec 93<br>Date when comments are received: 14 Jan 94      |

**DOE, Rocky Flats Plant**

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TM #10

TM Title

TM Status

Toxicity Assessment

When preparation is concluded or is estimated to be concluded: 24 Aug 93

Projected date of submittal to EPA/CDH : Unknown due to work stoppage

Actual date of submittal: TBD

Date when comments are received: TBD

**Planned Work for April**

- Finalize COC TM.
- Restart work on RI.
- Complete testing of SVE, Test Site I.

**Problems**

Resolve influent line issue for water treatment unit.

**Open Items**

None

**2.2.2 OU 2 REMEDIATION****Scope of Work Changes  
This Period**

None

**Technical Approach  
Changes This Period**

None

**IAG Milestone  
Accomplishments**

|  |           |
|--|-----------|
| Submit draft proposed IM/IRA Decision Document                         | 19 Jun 90 |
| Submit proposed Plan IM/IRA Decision Document                          | 18 Sep 90 |
| Submit draft Responsiveness Summary                                    | 13 Dec 90 |
| Submit final Responsiveness Summary and final IM/IRA Decision Document | 11 Jan 91 |
| Field Treatability Test System Installation Complete                   | 10 May 91 |
| Begin Field Treatability Testing (Carbon System)                       | 03 May 91 |
| Submit draft Treatability Test Report (Phase I GAC)                    | 01 Apr 92 |
| Complete IM/IRA Construction (radionuclides removal system)            | 24 Apr 92 |
| Begin Field Treatability Testing (radionuclides removal system)        | 27 Apr 92 |

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|   | <i>Project Status</i> |
|---|-----------------------|
| Submit final Treatability Test Report<br>(Phase I GAC)  | 02 Jun 92             |
| Submit Subsurface Site I draft Test Plan                | 29 Oct 92             |
| Submit Subsurface Site I final Test Plan                | 12 Jan 93             |
| Submit Subsurface Site 2 draft Test<br>Report           | 24 Jun 93             |
| Submit draft Surface Water Field<br>Treatability Report | 13 Jul 93             |
| Submit final Phase II Treatability Study<br>Report      | 26 Jan 94             |
| Begin Subsurface IMIRA Test I                           | 14 Feb 94             |

**Future IAG Milestones  
Through FY95**

None

**March Work Activity  
Status**

**Subsurface Interim Measure/Interim Remedial Action Operations Report** - DOE/HQ, DOE/RFO, and EG&G held a meeting to discuss the scope, budget and schedule associated with Site 2 of the IM/IRA Soil Vapor Extraction (SVE) Pilot Program at OU 2. The IM/IRA pilot testing to be conducted at Site 2, the East Trenches area of OU 2, will incorporate six-phase soil heating as an enhancement to SVE.

The overall technical scope and schedule for completion of activities was agreed upon by all who attended the meeting. Further scope definition was developed during March 1994. Finalization of TM #2, *Off-Gas Treatment Evaluation*, is planned for April 1994.

Pilot Tests One, Two, Three, Six, and Eight are complete. Over 10,000 gallons of waste water were generated during Test Three. Major constituents continue to be (PCE), trichloroethylene (TCE) and carbon tetrachloride.

The draft final Soil Vapor Survey (SVS) Report was received by EPA, CDH, and DOE in February 1994. The final SVS Report is scheduled to be submitted to the EPA/CDH by June 7, 1994. To date, no comments have been received.

An SVS modification is planned for April 1994 and will include comprehensive work at five 'high level' contamination areas. The results of the comprehensive survey will be included in the OU 2 SVS Report as an amendment. The additional data will be used for six-phase heating design.

**Field Treatment Unit (FTU) Surface Water Treatment Facility** - The FTU was prevented from collecting water during the month because of soapy influent water. The source of the water is being investigated. The FTU also failed to collect water for treatment during the month because the generators that provide power to it ran out of fuel. A critique was held to discuss the problem.

Installation of permanent plant power would alleviate the IRA power problems and continues to be an urgent item for the OU 2 FTU. The engineering package for construction is complete with construction scheduled to commence in April 1994.

During the month of March 1994, 6,000 gallons of water were treated from the OU 2 SVE Unit.

Treated surface water this month: 1,072,790 gallons  
Total treated water: 22, 730,120 gallons

**Planned Work for April**

- Install new influent line.
- Upgrade facility to handle H<sub>2</sub>O from "other" sources.
- Continue to treat SVE Water.
- Begin to install permanent power to the FTU to eliminate the use of diesel generators.

**Problems**

Installation of permanent plant power continues to be an urgent issue for the OU 2 FTU.

**Open Items**

None

### 2.3 OU 3 OFFSITE AREAS

OU 3 can be divided into two categories based on two main activities. The IAG directs activities according to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This involves assessment of contamination in offsite areas also referred to as Contamination of the Land Surface (IHSS 199), Great Western Reservoir (IHSS 200), Standley Lake (IHSS 201), and Mower Reservoir (IHSS 202). The second category responds to a 1985 out-of-court lawsuit settlement, McKay vs. U.S., which directed that the surface soil contamination be remediated. Remedial activities in compliance with the Settlement Agreement (deep disc plowing) began in 1985. The disturbance resulting from remediation is being revegetated with mediocre success. The overall schedule for this activity is determined by the year-to-year success of the revegetation effort and requirements of the landowners.

**Scope of Work Changes This Period**      None

**Technical Approach Changes This Period**      None

|                                      |   |           |
|--------------------------------------|---|-----------|
| <b>IAG Milestone Accomplishments</b> | Submit draft Past Remedy Report   | 26 Oct 90 |
|                                      | Submit draft Historical Information/<br>Preliminary Health Risk Assessment Report | 09 Nov 90 |
|                                      | Submit final Past Remedy Report   | 02 Apr 91 |
|                                      | Submit final Historical Information/<br>Preliminary Health Risk Assessment Report | 16 Apr 91 |
|                                      | Submit draft Phase I RFI/RI Work Plan   | 10 Jul 91 |
|                                      | Submit final Phase I RFI/RI Work Plan   | 06 Dec 91 |

#### **Future IAG Milestones Through FY95**

| <u>Milestone Name</u>              | <u>IAG Date Scheduled</u> | <u>Extension Status</u> | <u>Planned Accomplishment Date</u> |
|------------------------------------|---------------------------|-------------------------|------------------------------------|
| Submit draft Phase I RFI/RI Report | 16 Jul 93                 | 14 Feb 94               | 14 Feb 94*                         |
| Submit final Phase I RFI/RI Report | 13 Dec 93                 | 21 Oct 94               | 21 Oct 94*                         |

\* TBD due to HHRA issue work stoppage.

#### **March Work Activity Status**

The background data issue was resolved at a meeting with the regulatory agencies during the week of March 7, 1994. A presentation of the scope for the background soils study was presented. This study is in response to several earlier requests by the regulatory agencies to provide a more defensible background data set for surficial soils. The presentation included some statistical

The background data issue was resolved at a meeting with the regulatory agencies during the week of March 7, 1994. A presentation of the scope for the background soils study was presented. This study is in response to several earlier requests by the regulatory agencies to provide a more defensible background data set for surficial soils. The presentation included some statistical analysis that have already been conducted regarding the Rock Creek data set. The regulators indicated that they would accept the Rock Creek data set for background comparisons of metals and uranium, but they still questioned its appropriateness for plutonium and americium. The issue regarding this data was that RF plutonium and americium would automatically be considered COCs so there is no need to conduct a background comparison for these analytes, and uranium would be compared against Rock Creek to determine if it is a COCs. Preliminary results indicate that uranium will drop off the COCs list after the comparison is complete. It is not anticipated that the issue will be raised again at least for OU 3.

The other issue regarding background comparisons has been the comparability of background geochemical stream sediment samples with OU 3 reservoir samples. Essentially there is no physically and statistically appropriate data set available to conduct background comparisons with the OU 3 reservoir sediments. The regulatory agencies have agreed to not adhere to the statistical rigor of the Gilbert comparison. Background stream sediments will be compared with OU 3 stream sediments as well as OU 5 and 6 stream sediments. COCs identified in this process have a high probability of being identified as reservoir sediment COCs by virtue of their fate and transport. This information will then be qualitatively compared to Cherry Creek and Chatfield reservoir sediments using a weight of evidence approach. The regulatory agencies have already sent a draft letter recommending this approach. Resolution of the background issue allows us to move forward on the COCs TM.

Sample aggregation for wind tunnel samples was determined. Samples will be analyzed to calculate the amount of plutonium resuspended during the Wind Tunnel Study. The first step will be to send soil samples collected in the wind tunnel cyclone to an analytical laboratory for analysis. This process will help determine the methodology for aggregating the other samples.

DOE submitted comment responses to the regulatory agencies on the TM #1, *Draft Field Sampling Plan (FSP)*. It is expected that TM #1 will be approved. These responses have previously been presented and accepted by the regulatory agencies.

**Technical Memoranda**

**Project**

**OU 3-Offsite Areas**

TM #1

TM Title

TM Status

Field Changes to RFI/RI Work Plan

When preparation is concluded or is estimated to be concluded: 10 May 93

Projected date of submittal to EPA/CDH: 10 May 93

Actual date of submittal: 23 Apr 93

Date when comments were received:

TM #2

TM Title

TM Status

Exposure Scenarios for the HHRA

When preparation is concluded or is estimated to be concluded: 12 May 93

Projected date of submittal to EPA/CDH: 12 May 93

Actual date of submittal : 03 May 93

Date when comments were received: 15 Jul 93

TM #3

TM Title

TM Status

Modeling

When preparation is concluded or is estimated to be concluded: 29 Sep 93

Projected date of submittal to EPA/CDH: TBD

Actual date of submittal : N/A

Date when comments were received: N/A

TM #4

TM Title

TM Status

Contaminants of Concern (currently under a work stoppage)

When preparation is concluded or is estimated to be concluded: 18 Oct 93

Projected date of submittal to EPA/CDH: TBD

Actual date of submittal : N/A

Date when comments were received: N/A

**Planned Work for April**

- Develop new schedules based on risk assessment to data aggregation guidance. Resume work on HHRA. Update database.

*DOE, Rocky Flats Plant*

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- **Problems**                      Procuring power from Public Service for the air monitors continues to be held up.
- Open Items**                      None

## 2.4    OU 4 - SOLAR EVAPORATION PONDS

OU 4 is comprised of five solar evaporation ponds: 207A, 207B series (north, center, south), and 207C which were constructed for treatment and storage of process water from industrial operations. The process water contained treated acidic wastes, industrial liquid wastes (e.g., metal plating solutions), and low-level radioactive wastes.

As technology improved through the early 1960s and 1970s, the ponds were relined with various upgraded materials. However, leakage from the ponds into the soil and ground water was suspected. Interceptor trenches were installed in 1971 to collect and recycle contaminated ground water to the ponds and to minimize natural seepage and pond leakage from entering North Walnut Creek. In 1981, these trenches were upgraded by the current, larger interceptor trench system (ITS), which returned approximately 4 million gallons of ground water back into the solar evaporation ponds each year.

No additional process water has been pumped into the ponds since 1986 and with the diversion of the ITS water to storage tanks in April 1993, ground water is no longer returned to the ponds. This placement of water into the ponds had been occurring without meeting Land Disposal Restrictions and Minimum Technology Requirements of Resource Conservation and Recovery Act (RCRA). A new, dedicated Building 910 evaporation-treatment facility became operational in July 1993. This building supplements the plant's waste treatment facility in Building 374 to process the water stored in the modular tanks. As various upgrades are installed in Building 374 and as other plant waste streams decrease in volume, ITS water will be preferentially treated in Building 374 rather than Building 910.

The Solar Evaporation Ponds Subproject has been comprised of four technical areas: (1) remix of non-certified pondcrete and saltcrete, and pond sludge processing by means of the Agreement in Principle between DOE, CDH, and the Federal Facility Compliance Agreement; (2) a water management/treatment by means of the IM/IRA DD signed by EPA, CDH and DOE; (3) the OU 4 assessment and remedial action, per the IAG which identified the ponds as one of the sixteen OUs to be remediated at the RFP and superseded the 1988 Ponds-Closure Plan submitted by DOE to the regulators; and (4) pad operations, storage, and disposal activities that are necessary to meet the plant's RCRA interim status and permit requirements with regards to storage of pond wastes. The water management and pond sludge clean-out are necessary precursors to OU 4 assessment and remediation, and pad operations are necessary support activities at least until the pond sludge waste is processed and disposed. Revisions to scope in these areas are being implemented in accordance with the recent dispute resolution for OU 4.

Work in these four areas was planned to close the ponds and remediate OU 4. The work was scoped to (1) remove water from the ponds, (2) provide a treatment facility to replace the ponds as evaporation-treatment and storage units for pond-related contaminated ground water, (3) remove and dispose of pond sludge in compliance with all regulations such as the Land Disposal Restrictions of RCRA, (4) assess the nature and extent of contamination at the ponds; (5) complete a RCRA closure of the impoundments; and (6) remediate the ponds as needed.

### 2.4.1 OU 4 ASSESSMENT

#### Scope of Work Changes This Period

Project Work Plans have been revised to incorporate the results of the OU 4 dispute resolution, as outlined in the future milestone section. Budget changes to implement the revised scope were submitted to DOE/HQ. While awaiting DOE/HQ's approval, DOE/RFO is proceeding with the scope funded under these changes.

#### Technical Approach Changes This Period

None

#### IAG Milestone Accomplishments

|                                       |           |
|---------------------------------------|-----------|
| Submit draft Phase I RFI/RI Work Plan | 08 Jun 90 |
| Submit final Phase I RFI/RI Work Plan | 26 Nov 90 |

#### Future IAG Milestones Through FY95

| <u>Milestone Name</u>                  | <u>IAG Date<br/>Scheduled</u> | <u>Extension<br/>Status*</u> | <u>Planned<br/>Accomplishment<br/>Date</u> |
|--|-------------------------------|------------------------------|--|
| Submit draft Phase I RFI/RI Report     | 21 May 93                     | Deleted                      | Deleted                                    |
| Submit final Phase I RFI/RI Report     | 18 Oct 93                     | Deleted                      | Deleted                                    |
| Submit draft Phase II RFI/RI Work Plan | 22 Apr 94                     | Pending                      | 26 May 94                                  |
| Submit final Phase II RFI/RI Work Plan | 19 Sep 94                     |                              | 15 Jul 94                                  |

\* Established revised dates in dispute resolution

#### March Work Activity Status

The RCRA/CERCLA Investigation field work will continue through approval of a Record of Decision (ROD) and subsequent construction of the final Corrective/Remedial action in FY00 (if required). Further Assessment/Characterization under the remaining two ponds still containing sludge will not be known until vacuum sludge removal operations are complete.

#### Technical Memoranda

##### Project

##### OU 4-Solar Evaporation Ponds

TM #1

TM Title

TM Status

Vadose Zone Investigation  
draft submitted to EPA/CDH: 16 Nov 92  
Comments received: 30 Nov 92  
Conditional Approval: 30 Nov 92  
Projected submittal of final to EPA/CDH: 15 Dec 92  
Actual submittal date of final: 15 Dec 92  
Submittal of TM 1 Vadose Zone Schedule: 19 May 93  
EPA/CDH final Approval of TM #1: 17 Jun 93

|           |   |
|-----------|---|
| TM #2     |   |
| TM Title  | Modification to Field Activities  |
| TM Status | draft submitted to EPA/CDH: 18 Mar 93<br>Comments received: 07 May 93<br>Projected submittal of final to EPA/CDH: 07 Jun 93<br>Actual submittal date of final: 09 Jun 93<br>EPA/CDH final Approval of TM #2: 30 Jun 93                      |
| TM #3     |   |
| TM Title  | Environmental Evaluation  |
| TM Status | Draft submitted to EPA/CDH: 19 Mar 93<br>Comments received: EPA 21 Apr 93<br>CDH 02 Jun 93<br>Projected submittal of final to EPA/CDH: 30 Apr 93<br>Actual submittal date of final: 02 Jul 93<br>EPA/CDH final Approval of TM #3: 30 Jul 93 |
| TM #4     |   |
| TM Title  | Human Health Risk Assessment Exposure Scenarios   |
| TM Status | Draft submitted to EPA/CDH: 19 Mar 93<br>Comments received: EPA 21 Apr 93, CDH 23 Apr 93<br>Projected submittal of final to EPA/CDH: 11 Jun 93<br>Actual submittal date of final: 11 Jun 93<br>EPA/CDH final Approval of TM #4: 25 Jun 93   |
| TM #5     |   |
| TM Title  | Exposure Models   |
| TM Status | Projected submittal of draft to EPA/CDH: 01 Aug 93<br>Actual submittal of draft: 24 Jun 93<br>Projected submittal of final to EPA/CDH: 15 Oct 93<br>Received stop work order: 24 Aug 93   |
| TM #6     |   |
| TM Title  | Contaminants of Concern   |
| TM Status | Projected submittal of draft to EPA/CDH: 09 Nov 93<br>Projected submittal of final to EPA/CDH: 22 Dec 93<br>Received stop work order: 24 Aug 93   |
| TM #7     |   |
| TM Title  | Toxicity Assessment   |
| TM Status | Projected submittal of draft to EPA/CDH: 04 Nov 93<br>Projected submittal of final to EPA/CDH: 22 Dec 93<br>Received stop work order: 24 Aug 93   |

## **DOE, Rocky Flats Plant**

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### **Planned Work for April**

- Continue validation of data from drilling samples and vadose zone samples.
- Monitor Roundtable review cycle for IM/IRA DD, which is the final working group before the next IAG deliverable.

### **Problems**

None

### **Open Items**

Investigation of the floors of Ponds 207 C and 207 B South remains to be completed. The field work will be performed after these ponds are emptied and cleaned.

## **2.4.2 OU 4 REMEDIATION**

### **Scope of Work Changes This Period**

None

### **Technical Approach Changes This Period**

None

### **IAG Milestone Accomplishments**

None. The first IAG remediation milestone for this OU is the draft Phase I Proposed IM/IRA DD scheduled for April 14, 1994.

### **Future IAG Milestones Through FY95**

|  | <u>IAG Date Scheduled</u> | <u>Extension Status*</u> | <u>Planned Accomplishment Date</u> |
|--|---------------------------|--------------------------|------------------------------------|
| Submit draft Phase I Proposed IM/IRA Decision Document | 14 Apr 94                 | No Change                | 13 Apr 94                          |
| Submit final Phase I Proposed IM/IRA Decision Document | 12 Sep 94                 | 24 June 94               | 02 Jun 94                          |
| All Solar Ponds Emptied of Water and Sludge            | new                       | 20 Jan 95                | Summer                             |
| IM/IRA Responsiveness Summary                          | 25 Jan 95                 |                          | 01 Nov 94                          |

- Established revised dates in dispute resolution; schedule accelerated

### **March Work Activity Status**

**Phase I Interim Measures/Interim Remedial Action Plan (IM/IRA) Program** - As part of the plan to assess impacts of the change in regulatory perception as to the threat presented by the solar ponds liners, a compilation of issues raised by the change has been created. For each, a list of questions that must be answered to resolve the issue has been developed, and a single entity responsible for resolution has been assigned. Since the issues are highly interrelated, a logic network and schedule was developed to reveal the optimum sequence of addressing the issues. This schedule is essential for determination of available remedial options

and for establishment of new IAG milestones affected by the option selected.

The new schedule for review of the Interim Measure/Interim Remedial Action Environmental Assessment Decision Document (IM/IRA EA DD) was presented to the regulatory agencies on March 15, 1994. This new schedule was made necessary by requests for extended review time by CDH. The schedule, as prepared, indicated that an extension of the review period of 36 days would be required. CDH requested a further extension of 7 days, but this request was not supported by EPA. It was decided that the duration of extension must be negotiated between the two agencies at an appropriate management level. This disagreement as to the length of the extension period has delayed submittal by DOE of a formal request for an IAG milestone extension and thereby inhibits efforts to mitigate the position of vulnerability in which DOE and EG&G find themselves since the existing IAG milestones cannot now be met.

EPA made a request to remove the Phase II RFI/RI Work Plan from the IM/IRA EA DD. The request is being made because anticipated extensions of delivery dates for the document, made necessary by revision of the review schedule, may delay start of Phase II RFI/RI field work since that work cannot commence until the Work Plan is reviewed and approved. The request was discussed and resolved at the March 22, 1994, Roundtable Review meeting.

Comments pertaining to Part V of the IM/IRA EA DD were submitted by EG&G and a subcontractor. The comments will be resolved and incorporated immediately but the task will not be complete until all comments have been received, in accordance with a modified review schedule.

The State of Colorado's rule-making for the adoption of EPA's controversial Corrective Action Management Units (CAMUs) and Temporary Units continue to be tracked. OU 4 Phase I remediation/RCRA closure is success-oriented and assumes that the CAMUs and Temporary Units regulations will be promulgated this summer by the State. Although no opposition to the CAMUs and Temporary Units concept has been observed during the hearings, CDH has extended its rule-making at least another month while the State Attorney General's office revises the proposed language as a result of comments

to date from the public. If the State's rule-making should be substantially delayed or fail, substantial cost and schedule impacts will result for OU 4 remediation.

A meeting was held among the regulatory agencies, DOE, and EG&G to discuss implementing the Community Relations Plan for the upcoming OU 4 IM/IRA EA DD. A more intensive effort has been proposed because of the unusual features of the project, such as the compressed administrative process, the use of the Joint Working Group, the ultimate fate of wastes and media, and the CDH's first-ever CAMUs. A prime objective of the proposal is to maximally involve the public as stakeholders in the solutions to be implemented. The first public outreach was included on the agenda for the Environmental Restoration (ER) quarterly public meeting held on March 23, 1994.

EG&G transmitted its proposed strategy to fulfill the requirements of DOE Order 5481.1B. The strategy proposes that all elements required by the order are contained in the IM/IRA EA DD, thus eliminating the need for a separate Safety Assessment Document or Safety Assessment Review. DOE has concurred with the strategy .

**Regulatory** - Through an effort to better characterize backlog wastes at RF, a review of the EPA waste codes assigned to these wastes was completed. The addition of one code and deletion of another was recommended. Implementation of these recommendations is being planned. If combined with the aisle-space compliance plan currently being finalized, labeling actions can be accomplished with very little cost impact. Future sampling efforts are likely to be increased in scope, but early negotiations with CDH should help contain cost increases. The planning for these activities will begin.

The 904 Pad compliance study was submitted to CDH. The planning effort completed on the 904 Pad is being extended to the 750 pad. A computer aided design (CAD) drawing is being prepared for the 750 Pad and will be used to measure what is currently stored and what capacity is available in the future. The remediation effort has a need for storage and those needs will be codified as part of this effort. Adequate waste management and storage space is vital to the ongoing success of OU 4.

Input has been provided to the Solar Ponds waste characterization effort in support of Federal Facilities Compliance Act (FFCA) activities at Rocky Flats. Once the Solar Ponds sludge has been transferred to storage on the 750 Pad, the FFCA will replace the IAG as the governing requirement for sludge management.

**Pondsludge Status and Issues** - Vacuuming of the 207B South Pond continued during March 1994. To date, approximately 210,000 gallons of sludge have been transferred into fifteen tanks in Tents Three and Four as a result of 124 vacuuming runs. Vacuuming continued in the south west corner of the pond.

The clarifier tank was probed to determine the characteristics of its sludge. The material behaved very similar to B Pond material and will not require any special equipment for removal and vacuuming. Also, a Transportation Plan was written for the clarifier and issued for review.

The formation of a Solar Ponds Project Technology Selection Team was augmented by the addition of Los Alamos Technical Office (LATO) personnel. LATO was contracted by DOE to promote emerging technologies of waste treatment and will act in an advisory capacity to the Technology Selection Team. The team task is to make a final selection of the treatment process(es) for each of the solar pond sludges, including the inventory Pondcrete and Saltcrete.

**Water Management Status and Issues** - A Process Improvement Team (PIT) was formed to determine the most efficient way to utilize Building 910. The findings show that the processing costs of Building 910 have significantly increased over those of Building 374 because of personnel staffing levels required to operate RF are higher than anticipated. Upgrades in Building 374 have also improved its reliability and water processing efficiency. Thus, current planning methodologies call for Building 910 to be placed in a wet layup condition where it can be easily activated if necessary, but will no longer process modular storage tank water or require a full operations staff thereby creating a substantial cost savings in the remainder of this fiscal year and in outyears.

**DOE, Rocky Flats Plant**

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**Planned Work for April**

- Continue sludge removal operations of Pond 207B.
- Continue conceptual design and other IM/IRA DD components for pond closure.
- Continue maintenance on Building 910 in preparation for placement into wet layup.

**Problems**

None

**Open Items**

None

## 2.5 OU 5 - WOMAN CREEK

This activity encompasses assessment and remediation of 11 IHSSs in the Woman Creek drainage: Original Landfill (IHSS 115); Ash Pits (IHSS 133.1 - 133.4); Incinerator (IHSS 133.5); Concrete Wash Pad (IHSS 133.6); Detention Ponds C-1 and C-2 (IHSS 142.10 and 142.11); Surface Disturbance (IHSS 209), southeast of Building 881; and Water Treatment Plant Backwash Pond (IHSS 196). Two additional surface disturbances have been identified and are located, one south of the Ash Pits and a second west of IHSS 209. These last two sites have been included in the OU 5 Work Plan. IHSS 196 has been administratively assigned to this Operable Unit. Possible contamination in this operable unit was caused by landfill operations, storm-water runoff into holding ponds, and ash-pit operations. Constituents in OU 5 are believed to include nitrates, depleted uranium, metals, beryllium, solvents, pesticides, oils, paints, and cleaners. Media affected include soils, sediments, surface water, ground water, and air resuspension.

**Scope of Work Changes This Period**      None

**Technical Approach Changes This Period**      None

|                                      |                                       |           |
|--------------------------------------|---------------------------------------|-----------|
| <b>IAG Milestone Accomplishments</b> | Submit draft Phase I RFI/RI Work Plan | 05 Apr 91 |
|                                      | Submit final Phase I RFI/RI Work Plan | 30 Aug 91 |

### Future IAG Milestones Through FY95

| <u>Milestone Name</u>              | <u>IAG Date Scheduled</u> | <u>Extension Status</u> | <u>Planned Accomplishment Date</u> |
|------------------------------------|---------------------------|-------------------------|------------------------------------|
| Submit draft Phase I RFI/RI Report | 30 Nov 93                 |                         | 09 Feb 95*                         |
| Submit final Phase I RFI/RI Report | 03 May 94                 |                         | 18 Oct 95*                         |

\* Completion date to be rescheduled due to HHRA issues work stoppage.

**March Work Activity Status**      Work on the HHRA has partially resumed. Background comparison activities have begun; the issue with data aggregation has not been resolved.

The comment/response sheets responding to the EPA and CDH comments on draft TM #12, *Exposure Scenarios*, are in review and are being held until the issue with data aggregation has been resolved.

The draft Modeling TM #13, *Modeling*, was received by DOE on December 1, 1994. Comments from EPA and CDH were received. Comment/Response forms were prepared and were delivered to DOE in March 1994.

The OU 5 database is 94 percent complete; the validated database is 90 percent complete. The majority of the missing radiochemistry data was tracked and located at one laboratory. This data was in the RFEDS by March 11, 1994. The map of the EM 61 geophysical survey was reviewed on March 2, 1994; the draft report was available by March 11, 1994. The preliminary map has excellent resolution of the previously known ash pits as well as indicating the location of a heretofore unknown anomaly that has similar characteristics of the known ash pits. The location of this new anomaly is directly under the high voltage power lines. The results of this survey will lead to the downscoping of the additional amount of field work necessary to define the extent of the ash pits in IHSS 133, which is addressed in TM #15. The draft TM #15, *Addendum to the Field Sampling Plan*, was received by DOE for review on March 28, 1994.

#### Technical Memoranda

##### Project

##### OU 5 - Woman Creek Priority Drainage Remedial Investigation

TM #1

TM Title

TM Status

Surface Water and Sediments

When preparation is concluded or is estimated to be concluded: 30 Nov 92

Projected date of submittal to EPA/CDH: 30 Nov 92

Actual date of submittal: 13 Oct 92

TM #2

TM Title

TM Status

Surface Geophysics

When preparation is concluded or is estimated to be concluded: 30 Nov 92

Projected date of submittal to EPA/CDH: 30 Nov 92

Actual date of submittal: 13 Oct 92

TM #3

TM Title

TM Status

Soil Sampling at IHSS 115

When preparation is concluded or is estimated to be concluded: 07 May 93

Projected date of submittal to EPA/CDH: 07 May 93

Actual date of submittal: 26 Jan 93

TM #4

TM Title

TM Status

Soil Sampling at IHSS 133

When preparation is concluded or is estimated to be concluded: 07 Jun 93

|           |   |
|-----------|---|
| TM #5     | Projected date of submittal to EPA/CDH: 07 Jun 93   |
| TM Title  | Actual date of submittal: 12 Apr 93   |
| TM Status | Soil Gas Sampling at IHSS 115   |
|           | When preparation is concluded or is estimated to be concluded: 07 May 93  |
|           | Projected date of submittal to EPA/CDH: 07 May 93   |
|           | Actual date of submittal: 25 Mar 93   |
| TM #6     |   |
| TM Title  | Cone Penetrometer at IHSS 115   |
| TM Status | When preparation is concluded or is estimated to be concluded: 14 Apr 93  |
|           | Projected date of submittal to EPA/CDH: 14 Apr 93   |
|           | Actual date of submittal: 25 Mar 93   |
| TM #7     |   |
| TM Title  | Soil Borings at IHSS 133  |
| TM Status | When preparation is concluded or is estimated to be concluded: 07 May 93  |
|           | Projected date of submittal to EPA/CDH: 07 May 93   |
|           | Actual date of submittal: 19 Feb 93   |
| TM #8     |   |
| TM Title  | Monitoring Wells at IHSS 115  |
| TM Status | TM #8 has been canceled, and has been replaced by a letter outlining the justification behind the location of the wells in IHSS 115 |
| TM #9     |   |
| TM Title  | Monitoring Wells at IHSS 133, Ash Pits, Incinerator and Concrete Wash Pad   |
| TM Status | When preparation is concluded or is estimated to be concluded: 14 May 93  |
|           | Projected date of submittal to EPA/CDH: 06 May 93   |
|           | Actual date of submittal: 06 May 93   |
|           | EPA/CDH comments scheduled: 11 Jun 93   |
|           | Actual date of submittal: 28 Jun 93   |
| TM #10    |   |
| TM Title  | Soil Borings at IHSS 209  |
| TM Status | When preparation is concluded or is estimated to be concluded: 06 Mar 93  |
|           | Projected date of submittal to EPA/CDH: 06 Mar 93   |
|           | Actual date of submittal: 06 Mar 93   |

**DOE, Rocky Flats Plant**

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TM #11

TM Title

TM Status

Contaminants of Concern

When preparation is concluded or is estimated to be concluded: 17 Aug 94  
(Assuming the Stop Work Order is rescinded April 1, 1994.)

TM #12

TM Title

TM Status

Exposure Scenarios

When preparation is concluded or is estimated to be concluded: 24 Nov 93  
Projected date of submittal to EPA/CDH: Submittal of TM #12 was delayed due to the HHRA stop work order.  
Actual date of submittal: N/A

TM #13

TM Title

TM Status

Modeling

When preparation is concluded or is estimated to be concluded: 12 Jan 94  
Projected date of submittal to EPA/CDH: Submittal of TM #12 was delayed due to the HHRA stop work order.  
Actual date of submittal: N/A

TM #14

TM Title

TM Status

Toxicity Assessment

When preparation is concluded or is estimated to be concluded: 17 Aug 94  
Projected date of submittal to EPA/CDH: 17 Aug 94  
Actual date of submittal: N/A

TM #15

TM Title

TM Status

Addendum to the Field Sampling Plan

When preparation is concluded or is estimated to be concluded: 22 Jul 94  
Projected date of submittal to EPA/CDH: 22 Jul 94  
Actual date of submittal: N/A

**Planned Work for April**

- Respond to the regulatory agencies' comments on the draft TM #13, *Modeling*. When the data aggregation issue is resolved, OU 5 will respond to the regulatory agencies' comments on TM #12, *Exposure Scenarios*.
- The HHRA stop work order was rescinded on March 31, 1994. Determine the method for implementing the guidance and its cost and schedule impacts.

- Continue work on sections of the draft Phase I RFI/RI Report.
- Continue to organize, clean up, and manage the OU 5 invalidated analytical database.

**Problems**

The HHRA stop work order resulted in a 50 percent reduction in the work being completed and will continue to have a major impact on the project schedule until the guidance has been implemented.

**Open Items**

The method for implementing the data aggregation guidance and the corresponding cost and schedule impact needs to be determined.

## 2.6 OU 6 - WALNUT CREEK

This activity encompasses assessment and remediation in the Walnut Creek Drainage of 19 IHSSs: A-series Detention Ponds, Ponds A-1 through A-4 (IHSS 142.1 through 142.4 and 142.12); the B-series Detention Ponds, Ponds B-1 through B-5 (IHSS 142.5 through 142.9); the North, Spray Field (IHSS 167.1); the East Area Spray Field (IHSS 216.1), the Trenches A, B and C (IHSS 166.1, 166.2 and 166.3); the Sludge Dispersal Area (IHSS 141); the Triangle Area (IHSS 165); the Old Outfall Area (IHSS 143), and the Soil Dump Area (IHSS 156.2).

Completion of field operations resulted in obtaining the following samples from the IHSSs in OU 6: stream sediment, pond sediment, surface soil, subsurface soil, surface and ground water.

Eleven new ground water monitoring wells, installed in OU 6 to supplement five existing wells, were sampled each quarter for a minimum of 1 year. Geophysical surveys and radiation surveys were performed in selected areas to supplement the sampling activities.

The regulatory agencies have proposed a new IM/IRA on the operation of the RF Ponds. If approved, this IM/IRA would affect the RF pond water management, including OU 6, placing the water under CERCLA rather than the National Pollution Discharge Elimination System (NPDES).

### Scope of Work Changes This Period

None

### Technical Approach Changes This Period

None

### IAG Milestone Accomplishments

|                                       |            |
|---------------------------------------|------------|
| Submit draft Phase I RFI/RI Work Plan | 19 Apr 91  |
| Submit final Phase I RFI/RI Work Plan | 16 Sep. 91 |

### Future IAG Milestones Through FY95

| <u>Milestone Name</u>              | <u>IAG Date<br/>Scheduled</u> | <u>Extension<br/>Status</u> | <u>Planned<br/>Accomplishment<br/>Date</u> |
|------------------------------------|-------------------------------|-----------------------------|--|
| Submit draft Phase I RFI/RI Report | 04 Aug 93                     | 10 Jun 94                   | 21 Oct 94*                                 |
| Submit final Phase I RFI/RI Report | 07 Jan 94                     | 18 Nov 94                   | 10 Jul 95*                                 |

\* Completion date to be rescheduled due to HHRA issues work stoppage.

### March Work Activity Status

The OU 6 database is considered clean and all statistical analysis that can be generated is in progress. The background statistical analysis will aggregate all data by media in OU 6. This work continues on all data sets except for the pond sediments. The methodology for background comparison is still under review for pond sediments.

Work on the background comparison began on January 31, 1994. Work on other parts of the HHRA are still being delayed until the methodology for implementing the data aggregation guidance has been determined. A literature search on background comparisons for sediments was concluded and the available data on background pond sediment for metals and radiation is extremely limited. Statistical background comparison will be started for all media except for the pond sediments. The statistical analysis will be done on an OU by OU basis.

A meeting was held with the regulatory agencies to review the work that was accomplished to date on the EE and the proposed plans for additional sampling for polychlorinated biphenyls at the A and B Series of ponds. This project is preparing to begin field work on April 17, 1994. Sediment and biota sampling are planned for the A and B Series ponds; the field work is scheduled to last approximately 4 weeks.

**Pond Water Interim Measure/Interim Remedial Action (IM/IRA)** - The Dispute Resolution Committee held its second meeting on March 3, 1994. There was some agreement on technical issues and potential solutions; however, jurisdictional issues still remain in dispute. The Dispute Resolution Committee was unable to unanimously resolve the dispute by March 11, 1994, so a Written Statement of Dispute and joint statement were forwarded along with supporting information to the Senior Executive Committee for resolution. The Senior Executive Committee will serve as the forum for resolution of disputes where agreement has not been reached by the Dispute Resolution Committee. The Senior Executive Committee members shall as appropriate, confer, meet, and exert their best efforts to resolve the dispute and issue a written decision. If unanimous resolution of the dispute is not reached within 21 days (April 1, 1994), EPA's Regional Administrator shall issue a written position on the dispute.

The Dispute Resolution Committee is now trying to resolve exact wording required to reach agreement on three technical issues: 1) whether the Landfill leachate will be addressed and resolved in an expedited IM/IRA under OU 7 or in an expedited Pond Water Management IM/IRA DD; 2) whether 500,000 gallons of tankage for multi-purpose, off-line storage, will be built following a schedule stated in either the new National Pollution

Discharge Elimination System permit requirement or as a new IAG milestone; and, 3) guidance for interim pond operations. Jurisdictional issues still remain in dispute.

Work continues on the scoping and drafting of specifications for a mobile water treatment unit with the capability to respond and treat credible spills and water contamination problems resulting from off normal occurrences. The Radionuclide Removal System specification of OU 2 was used as a technical reference for developing and improving the specification.

#### **Technical Memoranda**

##### **Project**

##### **OU 6 - Walnut Creek**

TM #1

TM Title

TM Status

Work Plan Modifications

Approved by EPA: 08 Jan 93

TM #2

TM Title

TM Status

Exposure Scenarios

When preparation is concluded or estimated to be concluded: 04 Aug 94

Projected date of submittal to EPA/CDH: 04 Aug 94

Actual date of submittal: N/A

Date when EPA/CDH comments received: N/A

TM #3

TM Title

TM Status

Modeling Description

When preparation is concluded or is estimated to be concluded: 10 Nov 93

Projected date of submittal to EPA/CDH: 10 Nov 93

Actual date of submittal: 10 Nov 93

Date when EPA/CDH comments received: 23 Dec 93

TM #4

TM Title

TM Status

Contaminants of Concern

When preparation is concluded or is estimated to be concluded: 06 Jul 94

Projected date of submittal to EPA/CDH: 06 Jul 94

Actual date of submittal: N/A

Date when EPA/CDH comments received: N/A

TM #5

TM Title

TM Status

Toxicity Factors

When preparation is concluded or is estimated to be concluded: 06 Jul 94

Projected date of submittal to EPA/CDH: 06 Jul 94

Actual date of submittal: N/A

Date when EPA/CDH comments received: N/A

**Planned Work for April**

- Continue work on the EE. Begin biota and sediment sampling on A and B Series ponds for PCBs and radionuclides.
- Continue work on the FS.
- Continue to validate analytical data.
- Finalize modification of subcontract to collect additional PCB samples (biota and sediment) at the A and B Series of ponds.
- Continue finalization of TMs #2 and #3.
- If the dispute resolution is resolved, then the Pond Water Management IM/IRA will determine new scope and schedule.

**Problems**

The stop work order prevented continued work to be accomplished on the TM #4, *COC*, and delayed TM #2, *Exposure Scenarios*, and TM #3, *Modeling*. These tasks will begin once the methodology for implementing the data aggregation guidance has been determined.

**Open Items**

The method for implementing the data aggregation guidance and the corresponding cost and schedule impacts need to be determined.

## 2.7 OU 7 - PRESENT LANDFILL

The Present Landfill - OU 7 is located north of the plant complex on the western edge of an unnamed tributary of North Walnut Creek and is comprised of two IHSSs. IHSS 114 includes landfill waste and leachate at the Present Landfill, soils beneath the landfill potentially contaminated with leachate, and sediments and water in the East Landfill Pond. IHSS 203 contains potentially contaminated soils at the Inactive Hazardous Waste Storage Area. A section of the Present Landfill located in the southwest corner was used between 1986 and 1987 as a temporary storage area for hazardous waste. The Present Landfill began operation in August of 1968 and was originally constructed to provide for disposal of Rf nonradioactive and nonhazardous wastes. In September 1973, tritium was detected in leachate from the landfill. During the mid-1980s, extensive investigations were conducted on the waste streams (types) placed into the landfill; consequently, hazardous wastes/hazardous constituents were identified. Although currently operating as a nonhazardous sanitary landfill, the facility is considered an inactive hazardous waste disposal unit undergoing RCRA closure.

**Scope of Work Changes This Period**      None

**Technical Approach Changes This Period**      None

|                        |                                       |           |
|------------------------|---------------------------------------|-----------|
| <b>IAG Milestone</b>   | Submit draft Phase I RFI/RI Work Plan | 08 Jun 90 |
| <b>Accomplishments</b> | Submit final Phase I RFI/RI Work Plan | 28 Aug 91 |

### **Future IAG Milestones Through FY95**

| <u>Milestone Name</u>                   | <u>IAG Date Scheduled</u> | <u>Extension Status</u> | <u>Planned Accomplishment Date</u> |
|---|---------------------------|-------------------------|------------------------------------|
| Submit draft Phase I RFI/RI Report      | 12 Oct 93                 |                         | 20 Dec 93*                         |
| Submit final Phase I RFI/RI Report      | 16 Mar 94                 |                         | 02 Sep 94*                         |
| Submit draft Phase II RFI/RI Work Plan  | 13 Sep 94                 |                         | 07 Aug 95*                         |
| Submit draft Phase I Proposed IM/IRA DD | 01 Nov 94                 |                         | 14 Feb 97*                         |
| Submit final Phase II RFI/RI Work Plan  | 15 Feb 95                 |                         | 15 Apr 96*                         |
| Submit final Phase I Proposed IM/IRA DD | 06 Apr 95                 |                         | 16 Oct 97*                         |
| Submit IM/IRA Responsiveness Summary    | 14 Aug 95                 |                         | 14 May 98*                         |

\* Completion date to be rescheduled due to HHRA issues work stoppage. Current scoping negotiations projected to result in deletion of these milestones.

**March Work Activity Status**      On March 8, 1994, revised and rescoped project plans were submitted to EPA and CDH for OUs 7 and 11. Both proposals combine the Phase I and Phase II RFI/RI investigations, extend the Phase I milestones, but delete the Phase II milestones, thus streamlining the projects. DOE is waiting for approval of the proposed plan. A

proposal to move IHSSs 166.1, 166.2, 166.3, and 167.1 from OU 6 to OU 7 was also included in the proposed plan.

DOE held an internal meeting on March 2, 1994, to discuss the East Landfill Pond. The current planning assumptions for OU 7 include addressing the pond in the OU 7 IM/IRA decision process. A separate surface water IM/IRA pertaining to leachate collection and treatment is currently being assessed for cost and schedule impacts.

Additional meetings were held to discuss priorities of study for the Technology Literature Search and the Outyear Planning Document. A draft of the Outyear Planning Document is being reviewed.

A meeting was held on March 23, 1994, to discuss the possibility of an overlap in the schedules of the present landfill closure plan with the proposed landfill.

#### Technical Memoranda

##### Project

##### OU 7 - Present Landfill

TM #1

TM Title

TM Status

Exposure Scenarios

Initial reviews completed by DOE/HQ and DOE. Review completed by EPA and CDH. Response summary developed and submitted to all parties for review. Reviews complete. Revised response summary completed 25 May 93, with a final review underway prior to transmittal to the agencies.

TM #2

TM Title

TM Status

Model Description.

Transmitted to EPA and CDH for review: 08 Jan 93  
Initial review by EPA, CDH, and DOE completed:  
30 April 93  
Draft response summary complete: 25 May 93

TM #3

TM Title

TM Status

Addendum to final Phase I RFI/RI Work Plan. Surface Soil and Asbestos Pit Disposal Area Characterization Plan.

Transmitted to DOE for review: 05 Feb 93  
Transmitted to the EPA and CDH for review: 08 Feb 93  
Comments received: 26 Apr 93

Conditional approval by the EPA and CDH received:  
22 Feb 93

Clarification of outstanding comments from EPA and  
CDH received: 03 May 93

TM #4

TM Title

TM Status

Contaminants of Concern

When preparation is concluded or is estimated to be  
concluded: TBD

Projected date of submittal to EPA/CDH: TBD

Actual date of submittal: TBD

**Planned Work for April**

- Continue to work with the regulatory agencies to finalize streamlining the current IAG scope and schedule for OU 7.
- Complete the draft revised FSP to integrate full pathways assessment.
- Continue chemical and location specific ARARs development.
- Begin IM/IRA Decision Document development.

**Problems**

An approved data aggregation methodology has not been finalized. Draft DOE proposals for data aggregation indicate potential cost and schedule impacts exist because of multiple risk assessments. The total number of risk assessments required for each OU will be negotiated with the regulatory agencies and based upon data aggregation criteria that may not be supported by current regulatory agencies' approved Work Plans.

**Open Items**

The regulatory agencies are working to arrive at a compromise approach to the HHRA work stop order issue of data aggregation and a methodology for comparisons of site-specific data to background values.

Finalization of revised Data Quality Objectives (DQOs) supporting the re-baselining of OU 7 continues. CDH approved the revised DQOs; however, DOE elected to delay formal approval until submittal of the TM revising the Field Sampling Plan (FSP) and including the DQOs.

## 2.8 OU 8 - 700 AREA

The 24 Individual Hazardous Substance Sites (IHSSs) that constitute Operable Unit (OU) 8 encompass separate sites inside and around the production area of the Rocky Flats Plant. Contamination sources within the various IHSSs include above ground and underground tanks, equipment washing areas, and releases inside buildings which potentially affected areas outside the buildings. Contaminants from these sources may have been introduced into the environment through spills on the ground surface, underground leakage and infiltration, and in some cases through precipitation runoff. The chemical composition of the contaminants also varies widely between the IHSSs, ranging from low-level radioactive mixed wastes to nonradioactive organic and inorganic compounds.

OU 8 is within the Industrial Area (IA) at the Rocky Flats (RF) and is being managed collectively with the other Operable Units that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these IA OUs are being investigated together because of similar field investigation techniques: e.g., surface soil sampling, radiation survey, etc. The main benefit from managing the IA OUs is improved oversight, coordination, and reduced costs.

**Scope of Work Changes This Period**      None

**Technical Approach Changes This Period**      None

|                        |                                       |           |
|------------------------|---------------------------------------|-----------|
| <b>IAG Milestone</b>   | Submit draft Phase I RFI/RI Work Plan | 01 May 92 |
| <b>Accomplishments</b> | Submit final Phase I RFI/RI Work Plan | 01 Dec 92 |

### **Future IAG Milestones Through FY95**

| <u>Milestone Name</u>              | <u>IAG Date Scheduled</u> | <u>Extension Status</u> | <u>Planned Accomplishment Date</u> |
|------------------------------------|---------------------------|-------------------------|------------------------------------|
| Submit draft Phase I RFI/RI Report | 14 Feb 94                 | Denied                  | 02 Nov 15                          |
| Submit final Phase I RFI/RI Report | 12 Jul 94                 | Denied                  | 19 Jul 16                          |

### **March Work Activity Status**

On March 1, 1994, DOE sent a Statement of Dispute to the regulatory agencies regarding the OU 8 IAG violation for missing the Phase I RFI/RI Report. The purpose of the Statement of Dispute was to initiate the dispute resolution process under the IAG with the regulatory agencies. DOE and the regulatory agencies had 14 days from the issuance of the Statement of Dispute to attempt to resolve the issue informally. On March 14, 1994, DOE requested that the CDH and the EPA grant a 3-week extension of the informal discussion process past the

initial 14 days allowed in the IAG. On March 31, 1994, CDH and EPA granted RFO's request for an extension of the informal dispute resolution to April 14, 1994. The extension was granted based on DOE providing EPA and CDH with the following information by April 14, 1994:

1. An outline of a plan for remediation of the IA.
2. A date when the aforementioned plan will be developed, completed, and available to the regulatory agencies.
3. DOE's proposed time frame for the duration of any agreement to settle IAG violations associated with the IA.

DOE comments on the IA EE dated March 28, 1994, are being reviewed. The comments included issues regarding the redoing of some of the IA EE surveys in the spring and fall of 1994. Additionally, the Standard Operating Procedures (SOPs) for the EE is expected to be complete and the review will be completed by May 1994.

Field work continues with the High Purity Germanium (HPGe) detector for radiation surveys on OU 8 IHSSs inside the Protected Area (PA). The surveys were started on March 3, 1994, and were expected to be completed April 5, 1994. However, the HPGe unit was moved back to complete more detailed surveys on OU 12 near Building 664 on March 31, 1994. These detailed surveys are necessary to help characterize previous elevated readings around Building 664.

**Industrial Area Integrated Operable Units (8, 9, 10, 12, 13, and 14)** - The evaluation of IHSSs within the IA OUs was completed and is being reviewed. The IHSS evaluation summary was presented at the ER Accelerated Clean Up Working Group on March 10, 1993. The summary of the IHSS evaluation resulted in a plan received by DOE on March 16, 1993.

## Technical Memoranda

### Project

### OU 8-700 Area

TM #1

TM Title

Footing/Under Drains Data Compilation and Field Sampling Plan

|                        |   |
|------------------------|---|
| TM Status              | When preparation is concluded or is estimated to be concluded: TBD<br>Projected date of submittal to EPA/CDH: 22 Apr 94<br>Actual date of submittal: N/A<br>Date when EPA/CDH comments received: N/A  |
| Planned Work for April | <ul style="list-style-type: none"><li>• Continue work on preliminary draft TM #1, <i>Footings/Under Drains Data Compilation and Field Sampling Plan</i>. DOE will receive this TM for review on April 15, 1994.</li><li>• Continue field work with the HPGe detector for radiation surveys on OU 8 IHSSs inside the PA. When the OU 12 detailed surveys are completed, the HPGe unit will be moved back to complete work remaining in OU 8. The detailed surveys is expected to be completed in OU 12 by April 14, 1994.</li><li>• Complete review of DOE comments on the IA EE dated March 28, 1994. A determination to redo the IA EE surveys will be made by April 8, 1994. Work will continue on completing and obtaining approval for the SOP for EEs.</li></ul> |
| Problems               | None  |
| Open Items             | None  |

## **2.9 OU 9 - ORIGINAL PROCESS WASTE LINES**

This activity involves characterizing a series of tanks and associated process waste lines. The original process waste lines (OPWL) consisted of 35,000 feet of buried pipeline that transferred process wastes from production buildings to onsite treatment plants. A system of 60 designated pipe section, 39 single and multiple storage tank sites, and 3 other areas of suspected process waste leakage are included in OU 9. The system was placed into operation in 1952, and additions were made to the system through 1975. The original system was replaced over the 1975-1983 period by the new process waste system. Some tanks and lines from the original system were incorporated into either the new process waste system or the fire water deluge collection system.

The original system is known to have transported or stored various aqueous process wastes containing low-level radioactive materials, nitrates, caustics, and acids. Small quantities of other liquids were also introduced in the system, including medical decontamination fluids, miscellaneous laboratory liquids, and laundry effluent. The RFI/RI Phase I Work Plan includes inspection and sampling of the OPWL tanks and pipelines that are accessible and soil sampling to determine the extent of contamination in the vadose zone. The soil sampling will be performed by installing test pits and boring where known or suspected releases occurred, near pipe joints and valves, at approximately 100 - 200-foot intervals along the pipelines, and by installing borings around the outdoor tanks. Soil characterization studies will determine the need for soil removal and/or treatment. The results of the Phase I RFI/RI will determine the need for interim and/or final remediation action.

OU 9 is within the Industrial Area (IA ) at the Rocky Flats Plant and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these IA OUs are being investigated together because of similar field investigation techniques: e.g., surface soil sampling, radiation survey, etc. The main benefit from managing the IA OUs is improved oversight, coordination, and reduced costs.

|  |      |
|--|------|
| <b>Scope of Work Changes<br/>This Period</b> | None |
|--|------|

|   |      |
|---|------|
| <b>Technical Approach<br/>Changes This Period</b> | None |
|---|------|

|                        |                                       |           |
|------------------------|---------------------------------------|-----------|
| <b>IAG Milestone</b>   | Submit draft Phase I RFI/RI Work Plan | 08 Jun 90 |
| <b>Accomplishments</b> | Submit final Phase I RFI/RI Work Plan | 26 Nov 91 |

Future IAG Milestones  
Through FY95

| <u>Milestone Name</u>                   | <u>IAG Date<br/>Scheduled</u> | <u>Extension<br/>Status</u> | <u>Planned<br/>Accomplishment<br/>Date</u> |
|---|-------------------------------|-----------------------------|--|
| Submit draft Phase I RFI/RI Report      | 11 Apr 94                     |                             | 04 Jan 01                                  |
| Submit final Phase I RFI/RI Report      | 06 Sep 94                     |                             | 16 Sep 03                                  |
| Submit draft Phase II RFI/RI Work Plan  | 10 Mar 95                     |                             | 23 Jul 04                                  |
| Submit draft Phase I Proposed IM/IRA DD | 01 May 95                     |                             | 31 Oct 03                                  |
| Submit final Phase II RFI/RI Work Plan  | 07 Aug 95                     |                             | 01 Apr 05                                  |
| Submit final Phase I Proposed IM/IRA DD | 27 Sep 95                     |                             | 12 Jul 04                                  |

March Work Activity  
Status

EPA and CDH's decision on whether to grant an extension on the OU 9 draft and final RFI/RI Reports due April 11, 1994, and September 6, 1994, respectively is pending. These milestones are in Table 6 of the IAG.

A large portion of the RFI/RI will be comprised of test pits and the number of these test pits required will probably be over 200. Many of the test pits could require engineered shoring and either level A, B, or C of personal protection. Alternative methods of meeting data needs are being examined in lieu of excavating earthen materials.

Technical efforts are focused on utilizing an observational approach towards the outside pipeline investigation. In particular, it is proposed that instead of utilizing just test pits and excavation that a wider range of intrusive and nonintrusive tools be utilized in conjunction with a limited number of test pits. This approach would revolve around a decision tree that would allow for some flexibility in the field to ensure the safety of plant personnel and the public. It would also allow for better data quality and more extensive sampling at a lower cost.

TM #1, *Volume I-A, Field Sampling Plan for Outside Tanks*, was submitted to the regulatory agencies on March 15, 1994. The agencies will be requested to review and comment on this document by April 1, 1994.

Work on the conceptual approach for the draft TM #1, *Volume II-A, Field Sampling Plan for Outside Pipelines*, has been initiated. Preparation of the preliminary draft continued through March 1994 and will continue into April 1994. This is a separate volume from the outside tanks volume but both are part of the same TM.

Additional data compilation activities were conducted in the 700 Areas including areas around the 707 Building and the 776 Building. Fourteen manholes in the 700 Area were also opened to determine whether they are part of the old process waste lines.

Work continued on developing a master schedule for planning, planning document preparation, and coordination of field activities. A draft of the OU 9 detailed schedule was completed. This schedule will be incorporated into an overall schedule for the IA.

## Technical Memoranda

### Project

### OU 9-Original Process Waste Lines

TM #1

TM Title

TM Status

Field Sampling Plan - OPWL - Volume IA - Outside Tanks  
When preparation is concluded or is estimated to be concluded: Jan 94  
Projected date of submittal to EPA/CDH: Mar 94  
Actual date of submittal: 15 Mar 94  
Date when EPA/CDH comments received: N/A

TM #1

TM Title

TM Status

Field Sampling Plan - Volume 2A - Outside Pipelines  
When preparation is concluded or is estimated to be concluded: Jul 94  
Projected date of submittal to EPA/CDH: Apr 94  
Actual date of submittal: N/A  
Date when EPA/CDH comments received: Aug 94

### Planned Work for April

- Resume work on TM #1, *Volume II-A, Field Sampling Plan - Outside Pipelines*. Prepare draft test for FSP. Resolve agency comments on TM #1, *Volume I-A, Field Sampling Plan - Outside Tanks*.

### Problems

None

### Open Items

No response has been received from the regulatory agencies on the DOE request for an extension on the milestones for the OU 9 draft and final RFI/RI Reports due April 11, 1994, and September 6, 1994, respectively.

**2.10 OU 10 - OTHER OUTSIDE CLOSURES**

Operable Unit (OU) 10 is composed of 15 Individual Hazardous Substance Sites (IHSSs) scattered throughout plantsite. Six of the IHSSs are located in the Protected Area (PA), two are located in the buffer zone near the present landfill, and the remaining IHSSs are located near various buildings throughout plantsite. The types of wastes and contaminants identified at these sites include pondcrete/saltcrete storage, diesel and fuel spills, and heavy metal contamination. A draft and final Technical Memorandum will be developed which will summarize the non-intrusive portion of the OU 10 fieldwork. Other IHSS specific intrusive activities are scheduled for FY94.

OU 10 is currently being managed collectively with the other Industrial Area Operable Units (IA OUs: OUs 8, 9, 12, 13, 14). All of these OUs are being investigated collectively due to similarities in the field work for these OUs: e. g. surficial soil sampling, in-situ radiation surveys, soil gas sampling, etc. Combining this work will result in improved oversight, coordination, and reduced costs.

**Scope of Work Changes This Period**      None

**Technical Approach Changes This Period**      None

|                                      |                                       |           |
|--------------------------------------|---------------------------------------|-----------|
| <b>IAG Milestone Accomplishments</b> | Submit draft Phase I RFI/RI Work Plan | 27 Nov 91 |
|                                      | Submit final Phase I RFI/RI Work Plan | 01 May 92 |

**Future IAG Milestones Through FY95**

| <u>Milestone Name</u>                   | <u>IAG Date Scheduled</u> | <u>Extension Status</u> | <u>Planned Accomplishment Date</u> |
|---|---------------------------|-------------------------|------------------------------------|
| Submit draft Phase I RFI/RI Report      |                           | 25 Aug 94               | 02 Nov 15                          |
| Submit final Phase I RFI/RI Report      |                           | 30 Jan 95               | 19 Jul 16                          |
| Submit draft Phase I Proposed IM/IRA DD | 26 May 95                 |                         | 26 Feb 18                          |
| Submit draft Phase II RFI/RI Work Plan  |                           | 27 Jun 95               | 25 May 17                          |

**March Work Activity Status**      All unpaved surficial soil sampling for OU 10 was completed. Surficial soil sampling will continue in paved areas within IHSSs in the 400/800 Area in conjunction with surficial sampling for OU 12, which began on March 1, 1994. All surficial soil sampling locations were surveyed using Global Positioning System (GPS) equipment.

The OU 10 subcontractor has been instructed to delay completion of all surficial soil sampling and to focus on

implementation of the soil gas task. It is anticipated that the schedule for soil gas surveys will mirror that for the surficial soil sampling, namely, IHSSs 170/174, 176, etc.

All HPGe Gamma survey data was collected for OU 10. The Gamma survey group is currently using the associated GPS equipment of the Gamma system to survey all of the surficial soil sampling locations.

**Industrial Area (IA) Individual Hazardous Substance Site (IHSS) Material Removal** - The responsibility for the removal of storage items in or around IHSSs within OU 10 has not been identified; therefore, ER will not conduct any RFI/RI assessment activities in or around storage items until plant operations assigns the responsibility for the removal of the stored materials.

DOE has instructed EG&G that removal of material stored in or around IHSSs should be funded by plant operations rather than ER. Guidance has indicated that all Phase I RFI/RI assessment work should be deferred in IHSSs 213 and 214, because these IHSSs are active units for storage of the OU 4 IHSSs IM/IRA waste product.

**Technical Memoranda**

No TM has been developed for OU 10. The first TM for OU 10 will be for the nonintrusive field work, tentatively scheduled to be completed in April 1994.

**Planned Work for April**

- Begin soil gas surveys in OU-10 and the Property Utilization & Disposal (PU&D) Yard.
- Complete surface soil samples in paved areas.
- Begin data evaluation/development of TM #1.

**Problems**

None

**Open Items**

None

**2.11 OU 11 - WEST SPRAY FIELD**

The West Spray Field is located within the Rocky Flats Plant buffer zone immediately west of the plant security area. The West Spray Field was in operation from April 1982 to October 1985. During operation, excess liquids from solar evaporation ponds 207-B North and Center (contaminated ground water in the vicinity of the ponds and treated sanitary sewage effluent) were pumped periodically to the West Spray Field for spray application. The spray field boundary covers an area of approximately 105.1 acres, 38.3 of which received direct application of hazardous waste. The RFI/RI process will entail field studies to investigate the presence or absence of hazardous constituents in soil and ground water.

**Scope of Work Changes This Period**      None

**Technical Approach Changes This Period**      In accordance with regulatory guidance, surficial soil sampling and sampling for Volatile Organic Analytes (VOAs) in the subsurface materials and ground water were added to the FSP

|                                      |                                       |           |
|--------------------------------------|---------------------------------------|-----------|
| <b>IAG Milestone Accomplishments</b> | Submit draft Phase I RFI/RI Work plan | 08 Jun 90 |
|                                      | Submit final Phase I RFI/RI Work plan | 02 Jan 92 |

**Future IAG Milestones Through FY95**

| <u>Milestone Name</u>                  | <u>IAG Date Scheduled</u> | <u>Extension Status</u> | <u>Planned Accomplishment Date</u> |
|--|---------------------------|-------------------------|------------------------------------|
| Submit draft Phase I RFI/RI Report     | 20 Sep 94                 |                         | 18 Apr 95                          |
| Submit final Phase I RFI/RI Report     | 22 Feb 95                 |                         | 03 Jan 96                          |
| Submit draft Phase II RFI/RI Work Plan | 21 Aug 95                 |                         | 25 Nov 96                          |

**March Work Activity Status**      On March 8, 1994, revised and rescoped project plans were submitted to EPA and CDH for OUs 7 and 11. Both proposals combine the Phase I and Phase II RFI/RI investigations, extend the Phase I milestones, but delete the Phase II milestones, thus streamlining the projects. DOE is waiting for approval of the proposed plan. A proposal to move IHSSs 166.1, 166.2, 166.3, and 167.1 from OU 6 to OU 7 was also included in the proposed plan.

The TM to revise the FSP is undergoing revisions in response to informal comments from the EPA. The CDH has not responded as to the proposed details of the FSP. The following items are undergoing a day-for-day schedule slip until guidance from CDH concerning the FSP TM is received: TM #1, TM #2, Work Plan

Implementation Plan, Site-Specific Health and Safety Plan (HSP), and Field Mobilization.

Work continues on the Work Plan Implementation Plan and the HSP; however, finalization can not occur until the regulatory agencies provide further guidance related to the proposed revised FSP.

#### Technical Memoranda

##### Project

##### OU 11 - West Spray Field

TM

TM Title

TM Status

Revised Field Sampling Plan and Data Quality Objectives  
Informally submitted to EPA/CDH: 02 Feb 94  
Currently, undergoing revisions and addressing comments  
Awaiting CDH comments

TM #1

TM Title

TM Status

Exposure Scenarios  
When preparation is concluded or is estimated to be concluded: 11 Mar 94 (late)  
Projected date of submittal to EPA/CDH: 02 May 94  
Actual date of submittal: N/A  
Date when EPA/CDH comments received: N/A

TM #2

TM Title

TM Status

Modeling  
When preparation is concluded or is estimated to be concluded: 22 Mar 94 (late)  
Projected date of submittal to EPA/CDH: 12 May 94  
Actual date of submittal: N/A  
Date when EPA/CDH comments received: N/A

TM #3

TM Title

TM Status

Contaminants of Concern  
When preparation is concluded or is estimated to be concluded: 20 Sep 94  
Projected date of submittal to EPA/CDH: 09 Nov 94  
Actual date of submittal: N/A  
Date when EPA/CDH comments received: N/A

TM #4

TM Title

TM Status

Toxicity  
When preparation is concluded or is estimated to be concluded: 19 Oct 94  
Projected date of submittal to EPA/CDH: 12 Dec 94

Actual date of submittal: N/A

Date when EPA/CDH comments received: N/A

**Planned Work for April**

- Receive final concurrence from CDH and EPA on the integrated field investigation for OU 11.
- Obtain approval for Site-Specific HSP.
- Begin field work.
- Complete document modification request for sonic drilling.
- Begin TMs #1 and #2 for risk assessment.

**Problems**

None

**Open Items**

The TM to revise the FSP requires review by the regulatory agencies before field work can begin.

## 2.12 OU 12 - 400/800 AREA

The 400/800 Area involves assessment and remediation of the 10 Individual Hazardous Substance Sites (IHSSs) within the 400/800 Area: Multiple Solvent Spills at the West and South Loading Dock Areas (IHSSs 116.1 and 116.2); Fiberglassing Areas North and West of Building 664 (IHSSs 120.1 and 120.2); Cooling Tower Ponds - north, east, south, and west of Building 460 (IHSSs 136.1, and 136.2); Building 881 - Conversion Site(147.2); Radioactive Site - South Area (IHSS 157.2); Acid Leaks (2) (IHSS 187); and Multiple Acid Spills (IHSS 189).

Assessment will consist of preparing a Phase I RFI/RI Work Plan, which will include both an Environmental Evaluation (EE) and a Human Health Risk Assessment (HHRA). After implementation of this Work Plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. A Phase II Investigation may be performed as necessary. A Feasibility Study (FS) to determine the best methods to remediate the area will be conducted as part of the assessment.

Remediation may consist of development and execution of a Remedial Action Plan (RAP) based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a Record of Decision (ROD), release to the public, and implementation of the plan.

OU 12 is within the Industrial Area (IA ) at the Rocky Flats Plant and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these IA OUs are being investigated together because of similar field investigation techniques: e.g., surface soil sampling, radiation survey, etc. The main benefit from managing the IA OUs is improved oversight, coordination, and reduced costs.

**Scope of Work Changes  
This Period**                      None

**Technical Approach  
Changes This Period**                      None

|  |                                       |           |
|--|---------------------------------------|-----------|
| <b>IAG Milestone<br/>Accomplishments</b> | Submit draft Phase I RFI/RI Work Plan | 08 May 92 |
|  | Submit final Phase I RFI/RI Work Plan | 05 Oct 92 |

### **Future IAG Milestones Through FY95**

| <u>Milestone Name</u>              | <u>IAG Date<br/>Scheduled</u> | <u>Extension<br/>Status</u> | <u>Planned<br/>Accomplishment<br/>Date</u> |
|------------------------------------|-------------------------------|-----------------------------|--|
| Submit draft Phase I RFI/RI Report | 20 Apr 94                     |                             | 11 Mar 99                                  |
| Submit final Phase I RFI/RI Report | 15 Sep 94                     |                             | 17 Nov 99                                  |

**March Work Activity Status** Sampling suites for samples to be completed in IHSSs 136.2 and 189 were developed using adjacent IHSS sampling suites. An adjacent IHSS is defined as an IHSS that has boundaries within 100 feet of the IHSSs being sampled. Surficial soil sample analyte lists are to be modified to reflect analytes from adjacent IHSSs. The analytes from the adjacent IHSSs that are not included in the current IHSSs analyte list are added to the current analyte list.

Surficial soil sampling activities continued. Samples were taken in IHSSs 120.1, 136.2, and IHSSs 147.2. Surficial soil sampling was completed in IHSS 189. Sediment sampling occurred on March 16, 1994, in IHSS 136.2. After completion of the sediment samples, sampling activities are planned to begin in IHSSs 120.2 and 116.2.

Because of the volume of soil needed to complete the adjacent Individuality Assurance/Quality Control duplicate sample, it is proposed that duplicates be collected, as needed, on an analyte basis instead of on a location basis. The rate the duplicate samples collected should still meet the requirements of the Quality Assurance Project Plan (QAPjP). The QAPjP and the SOP requirements will ensure compliance.

Soil disturbance permits for soil gas sampling were initiated March 4, 1994; they were completed and approved in March 1994.

**Technical Memoranda** The first TM scheduled for OU 12 is the nonintrusive TM due in April 1994.

**Planned Work for April**

- Begin soil gas sampling in OU 12.
- Complete surficial soil sampling in paved areas.
- Complete sediment sampling.
- Collect additional HPGe data near Building 664.

**Problems** None

**Open Items** None

**2.13 OU 13 - 100 AREA**

Cleanup of the 100 Area involves the assessment and remediation of 14 Individual Hazardous Substance Sites (IHSSs): Chemical Storage - North, Middle, and South Sites (IHSSs 117.1, 117.2 and 117.3); Oil Burn Pit #1 (IHSS 128); Lithium Metal Destruction Site (IHSS 134); Waste Spills (IHSS 148); Fuel Oil Tank (IHSS 152); Radioactive Site - North Area (IHSS 157.1); Radioactive Site - Building 551 (IHSS 158); Waste Peroxide Drum Burial (IHSS 169); Solvent Burning Ground (IHSS 171); Valve Vault 12 (IHSS 186); Caustic Leak (IHSS 190); and the Hydrogen Peroxide Spill (IHSS 191), and the Scrap Metal Site (IHSS 197).

Assessment will consist of preparing a Phase I RFI/RI Work plan, which will include both an Environmental Evaluation (EE) and an Human Health Risk Assessment (HHRA). After implementation of this Work Plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. A Feasibility Study (FS) to determine the best methods to remediate the area will be conducted as part of the assessment.

Remediation will consist of development and execution of a Remedial Action Plan (RAP) based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a Record of Decision (ROD), release to the public, and implementation of the plan.

OU 13 is within the Industrial Area (IA ) at the Rocky Flats (RF) and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these IA OUs are being investigated together because of similar field investigation techniques: e.g., surface soil sampling, radiation survey, etc. The main benefit from managing the IA OUs is improved oversight, coordination, and reduced costs.

**Scope of Work Changes  
This Period**                      None

**Technical Approach  
Changes This Period**                      None

|                        |  |           |
|------------------------|--|-----------|
| <b>IAG Milestone</b>   | Submit draft Phase I RFI/RI Work Plan  | 15 May 92 |
| <b>Accomplishments</b> | Submit final Phase I RFI/ RI Work Plan | 12 Oct 92 |

**Future IAG Milestones  
Through FY95**

| <u>Milestone Name</u>              | <u>IAG Date<br/>Scheduled</u> | <u>Extension<br/>Status</u> | <u>Planned<br/>Accomplishment<br/>Date</u> |
|------------------------------------|-------------------------------|-----------------------------|--|
| Submit draft Phase I RFI/RI Report | 08 Aug 94                     |                             | 24 Mar 99                                  |
| Submit final Phase I RFI/RI Report | 11 Jan 95                     |                             | 02 Dec 99                                  |

**DOE, Rocky Flats Plant**

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**March Work Activity  
Status**

Revision of a draft letter report/sampling plan, TM #1, *Addendum to the Field Sampling Plan*, was sent to the regulatory agencies for their approval. Slight changes were made to the FSP. Surficial soil sampling cannot begin until the regulatory agencies have concurred with the proposed sample locations. A meeting was held with the regulatory agencies, DOE, and EG&G on March 21, 1994, to discuss the proposed sampling locations. The agencies requested that the figures show the revised locations.

Work continues on completing the tasks necessary for the OU 13 Operational Readiness Review (ORR). A copy of the entire OU 13 history file was prepared.

The replanning of the OU 13 schedule is 95 percent complete. The revision includes the substitution of geostatistical data analysis of all existing data for the entire IA instead of preparation of the first two TMs, which are in the planning documents for OUs 13 and 14.

A modification of the procedure for FO. 28 Tank and Pipeline Investigation is being prepared.

**Technical Memoranda**

**Project**

**OU 13-100 Area**

TM #1

TM Title

TM Status

Addendum to Field Sampling Plan

When preparation is concluded or is estimated to be concluded: Feb 94

Projected date of submittal to EPA/CDH: Feb 94

Actual date of submittal: 03 Mar 94

Date when EPA/CDH comments received: N/A

A nonintrusive TM will be prepared in FY95 summarizing the nonintrusive field work and recommending Stage II activities for the remedial investigation intrusive field work.

**Planned Work for April**

- Revise the OU 13 TM #1 to reflect comments on the draft version submitted in March 1994.

**Problems**

None

**Open Items**

None

## 2.14 OU 14 - RADIOACTIVE SITES

Work at the "Radioactive Sites" involves the assessment and remediation of eight Individual Hazardous Substance Sites (IHSSs): Radioactive Site - 700 Area Site #1 and Site #2 (IHSS 131); Radioactive Soil Burial - Building 334 Parking Lot and Soil Dump Area (IHSSs 156.1); Building 444 Parking Lot (IHSS 160) and Building 664 (IHSS 161); and Radioactive Site - 700 Area Site #2 (IHSS 162); and Radioactive Sites - 800 Area which includes the Concrete Slab, Building 886 Spills, and the Building 889 Storage Pad (IHSSs 164.1, 164.2, and 164.3). In 1991, one of two Soil Dump Area IHSSs (156.2) was deleted from OU 14 and added to OU 6.

Assessment will consist of preparing a Phase I RFI/RI Work Plan, which will include both an Environmental Evaluation (EE) and an Human Health Risk Assessment (HHRA). After implementation of this work plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. A Feasibility Study (FS) to determine the best methods to remediate the area will be conducted as a subsequent phase to the assessment phase.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase and feasibility study of the project. This process includes review and approval by EPA and CDH, followed by a Record of Decision (ROD), release to the public, and implementation of the plan.

OU 14 is within the Industrial Area (IA ) at the Rocky Flats (RF) and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these IA OUs are being investigated together because of similar field investigation techniques: e.g., surface soil sampling, radiation survey, etc. The main benefit from managing the IA OUs is improved oversight, coordination, and reduced costs.

Scope of Work Changes  
This Period

None

Technical Approach  
Changes This Period

None

IAG Milestone  
Accomplishments

Submit draft Phase I RFI/RI Work Plan  
Submit final Phase I RFI/RI Work Plan

26 Jun 92  
19 Oct 92

Future IAG Milestones  
Through FY95

| <u>Milestone Name</u>              | <u>IAG Date<br/>Scheduled</u> | <u>Extension<br/>Status</u> | <u>Planned<br/>Accomplishment<br/>Date</u> |
|------------------------------------|-------------------------------|-----------------------------|--|
| Submit draft Phase I RFI/RI Report | 20 Dec 94                     |                             | 13 Feb 01                                  |
| Submit final Phase I RFI/RI Report | 23 May 95                     |                             | 22 Oct 01                                  |

**March Work Activity  
Status**

Work began on the tasks necessary for the OU 14 ORR. Building 885-6 indoctrination will be scheduled concurrent with the beginning of field investigations.

The rebaselining revision of the OU 14 schedule is 90 percent complete. The revision will include the substitution of geostatistical data analysis of all existing data for the entire IA instead of preparation of the first two TMs that are present in the OU 13 and 14 Work Plans. At this point, some of the limited (nonintrusive) studies for this OU were pushed into FY95. In order to preserve as much scope as possible, additional field sampling crews will be placed in the field. In addition, new equipment may allow the soil gas collection and analysis to proceed much faster than originally planned.

**Technical Memoranda**

The current Five-Year Plan (FYP) indicates that two TMs, *Human Health Risk Assessment-Exposure Assessment* and *Human Health Risk Assessment-Modeling*, were scheduled for completion in March 1994. These tasks were rescheduled because of the integration of OUs 8, 9, 10, 12, 13, and 14. Currently, only nonintrusive/limited RI field work is scheduled for OU 14 in FY94.

A nonintrusive TM will be prepared in FY95 summarizing the nonintrusive field work and recommending Stage II activities for the RI intrusive field work.

**Planned Work for April**

- Work on the removal of materials stored in the IHSSs.

**Problems**

None

**Open Items**

None

## **2.15 OU 15 - INSIDE BUILDING CLOSURES**

OU 15 was originally comprised of eight IHSSs:

- IHSS 178, Building 881 - Drum Storage Area
- IHSS 179, Building 865 - Drum Storage Area
- IHSS 180, Building 883 - Drum Storage Area
- IHSS 204, RCRA Unit 45, Building 447 - Original Uranium Chip Roaster
- IHSS 211, RCRA Unit 26, Building 881 - Drum Storage Area
- IHSS 212, RCRA Unit 63, Building 374- Drum Storage Area
- IHSS 215, Unit 55, 12 - Tank T - 40
- IHSS 217, RCRA Unit 32, Building 881 - Cyanide Bench Scale Treatment

During April 1992, IHSS 215, Unit 55.13 - Tank T - 40, was deleted from OU 15 and added to OU 9 as part of a IHSS realignment pursuant to Part 32, Paragraph 191 (Additional Work or Modification to Work) of the IAG. This change was recommended by DOE in the OU 9 Phase I RFI/RI Work Plan approved by CDH and EPA in April 1992. Also, IHSS 212, RCRA Unit 63, Building 374 Drum Storage Area was removed from the OU 15 RFI/RI process since it is currently active as a Drum Storage Area and has been included in the Rocky Flats Plant RCRA Part B TRU Mixed Waste permit application. The remaining six IHSSs currently have interim status under RCRA.

Closure Plans for the IHSSs were submitted to CDH during 1988 and 1989. The IHSSs were also included within the IAG. During scoping meetings for preparation of the Phase I RFI/RI Work Plan for OU 15 conducted between EPA, CDH, and DOE during April 1992, the Closure Plan and RFI/RI presses were combined. In effect, the Clean Closure Performance Standard (5 CCR 1007-3 Part 265.111) will serve as the Applicable or Relevant and Appropriate Requirements (ARARs) for the OU 15 RFI/RI inside buildings and Closure Plans will no longer be prepared. The public comment period required for the Closure Plan process will be fulfilled through the IM/IRA process of the IAG.

Drums containing solids and liquids were stored at the OU 15 IHSSs. Types of waste included oils, coolants, and solvents containing chlorinated hydrocarbons (RCRA F001 and F002 wastes) and waste paints and metals contaminated with solvents. Hazardous constituents include chlorinated solvents, beryllium, and uranium. No known spills or releases occurred. The current focus is characterization of contamination associated with the OU 15 IHSSs inside buildings, evaluation of the likelihood of contaminant exterior outside the buildings, and, if applicable, decontamination of the concrete floors and other facilities at the indoor RCRA units and remediation of contamination outside the buildings, if found.

**Scope of Work Changes  
This Period**                      None

**Technical Approach  
Changes This Period**                      None

|                        |                                       |           |
|------------------------|---------------------------------------|-----------|
| <b>IAG Milestone</b>   | Submit draft Phase I RFI/RI Work Plan | 01 Jun 92 |
| <b>Accomplishments</b> | Submit final Phase I RFI/RI Work Plan | 26 Oct 92 |

Future IAG Milestones  
Through FY95

| <u>Milestone Name</u>              | <u>IAG Date<br/>Scheduled</u> | <u>Extension<br/>Status</u> | <u>Planned<br/>Accomplishment<br/>Date</u> |
|------------------------------------|-------------------------------|-----------------------------|--|
| Submit draft Phase I RFI/RI Report | 01 Aug 94                     |                             | 01 Aug 94                                  |
| Submit final Phase I RFI/RI Report | 04 Jan 95                     |                             | 04 Jan 9                                   |

March Work Activity  
Status

Formal comments were received from DOE/HQ and DOE/RFO and informal/draft comments were received from EPA and CDH on TM #1, *Draft Field Sampling Plan*. Both of the RCRA Treatment Units within OU 15 (i.e., the Original Uranium Chip Roaster, Unit 45 and the Cyanide Bench Scale Treatment, Unit 32) have met RCRA Clean Closure performance standards as suggested in the comments on TM # 1 from CDH. Both units can now be clean closed with respect to RCRA. The need for verification sampling at the other four OU 15 drum storage areas must be addressed within the final TM #1, based on a re-evaluation of analytical results. Clean closure performance standards for the drum storage areas must be consistent with the RF RCRA Permit and the current "Economic Conversion" standards being developed for the NCPP. Economic conversion cleanup standards have not been agreed upon by the DOE, EPA, or CDH at this time. It is anticipated that Occupational Safety and Health Administration (OSHA) standards for workers will be adopted as the economic development standards for interim review.

CDH and EPA preliminary/draft comments relative to draft TM #1 for OU 15 Phase I RFI/RI were discussed during a March 17, 1994, meeting with CDH and EPA. This discussion resulted in a decision to clean close the RCRA Storage and Treatment Units using verification sampling commencing in May 1994. The three RCRA units containing radiological contamination will proceed through the RFI/RI process leading to a ROD currently anticipated in late FY96.

Technical Memoranda

Project

OU 15-Inside Building Closures

TM #1

TM Title

TM Status

Draft Field Sampling Plan (FSP)

When preparation is concluded or is estimated to be concluded:

Projected date of submittal to EPA/CDH: 28 Feb 94  
Actual date of submittal: 28 Feb 94  
Date when comments were received: preliminary  
17 Mar 94 (formal 07 April 94\*)

TM #2

TM Title

TM Status

Draft Human Health and Risk Assessment (HHRA)  
When preparation is concluded or is estimated to be concluded:  
Projected date of submittal to EPA/CDH: TBD - may not be necessary unless Stage III field work is performed.  
Actual date of submittal: 28 Feb 94  
Date when comments were received: preliminary  
17 Mar 94 (formal 07 April 94\*)

- Excludes formal comments from the EPA

**Planned Work for April**

- Continue preparation of the final TM #1 based on EPA and CDH comments. Equipment blank and verification samples and additional IHSS information will be obtained per CDH comments. Preparations are currently being made to initiate verification sampling during May 1994 in response to CDH's comments on TM #1, in accordance with the Phase I RFI/RI Work Plan for OU 15.

**Problems**

Formal comments from the EPA have not yet been received for the draft Phase I RFI/RI Report for OU 15. If these comments are not received from EPA by April 15, 1994, complete chemical analyses results may not be available for inclusion in the draft Phase I RFI/RI Report on August 1, 1994; DOE is currently working to resolve the situation.

**Open Items**

None

**2.16 OU 16 - LOW PRIORITY SITES**

This assessment activity consists of preparing a No Action Justification Document (NAJD) for seven IHSSs: Solvent Spill, Antifreeze Discharge, Steam Condensate Leaks (400 and 700 Areas), Nickel Carbonyl Disposal, Water Treatment Plant Backwash Pond, and Scrap Metal Sites. The NAJD was approved by the regulatory agencies and the Record of Decision (ROD) process was initiated to close OU 16 as an operable unit (OU) at Rocky Flats Plant.

**Scope of Work Changes This Period**      None

**Technical Approach Changes This Period**      None

|                                      |                           |            |
|--------------------------------------|---------------------------|------------|
| <b>IAG Milestone Accomplishments</b> | Submit draft NAJD         | 04 Mar 92  |
|                                      | Submit final NAJD         | 30 July 92 |
|                                      | Submit Revised final NAJD | 16 Oct 92  |

**Future IAG Milestones Through FY95**      None

**March Work Activity Status**      A meeting was held on March 3, 1994, among EPA, CDH, DOE, and EG&G to discuss the public comments on the OU 16 Proposed Plan (PP) and draft Modification of Colorado Hazardous Waste Permit for RF OU 16: Low Priority Sites. The Responsiveness Summary (RS) to public comments was also discussed at this meeting. The final RS with regard to public comments on the OU 16 PP and the draft ROD for OU 16 were completed and DOE reviewed them. The final RS is included as part of the draft ROD. Preparation of the draft ROD began during March 1994. This action will close OU 16 at RF during 1994.

**Technical Memoranda**      None

**Planned Work for April**      • Complete the draft ROD by May 1994.

**Problems**      None

**Open Items**      None

## 2.17 SITEWIDE ACTIVITIES

Sitewide activities include several task that encompass a wide variety of plans, procedures, reports, studies, and other activities required by IAG and that apply to RF environmental activities in general. Activities include, but not limited to: Health Safety Plan (HSP), Sampling and Analysis Plan, Treatability Study deliverables, Background Study Plan, Groundwater Geochemistry, Risk Assessment, Industrial Area Interim Measure/Interim Remedial Action Plan (IA IM/IRA), hydrological characterization, Background Soils Study Plan, Decontamination Facilities, ER Waste handling facilities, ground water monitoring, Decontamination & Decommission, And Program Management Support activities.

**Scope of Work Changes  
This Period**                      None

**Technical Approach  
Changes This Period**                      None

|  |   |           |
|--|---|-----------|
| <b>IAG Milestone<br/>Accomplishments</b> | Submit draft Background Study Report<br>(Water)               | 15 Dec 89 |
|  | Submit draft Background Study Report<br>(Soils)               | 15 Dec 89 |
|  | Submit draft Community Survey Plan                            | 23 Jan 90 |
|  | Submit final Community Survey Plan                            | 22 Mar 90 |
|  | Submit draft Health and Safety Plan                           | 15 Aug 90 |
|  | Submit draft Quality Assurance Project<br>Plan                | 29 Aug 90 |
|  | Submit draft Standard Operating<br>Procedures                 | 29 Aug 90 |
|  | Submit draft Plan for Prevention of<br>Dispersion Contaminant | 19 Sep 90 |
|  | Submit draft Treatability Study Plan                          | 21 Sep 90 |
|  | Submit draft Community Relations Plan                         | 01 Nov 90 |
|  | Submit final Health and Safety Plan                           | 12 Nov 90 |
|  | Submit Revised Background Study<br>Report                     | 21 Dec 90 |
|  | Submit final Community Relations Plan                         | 22 Jan 91 |
|  | Submit final Quality Assurance Project<br>Plan                | 01 Mar 91 |
|  | Submit final Standard Operating<br>Procedures                 | 01 Mar 91 |
|  | Submit draft Radionuclides Discharge<br>Limits Plan           | 05 Apr 91 |
|  | Submit Community Relations Plan<br>Responsiveness Summary     | 21 Jun 91 |
|  | Submit final Treatability Study Plan                          | 03 Jun 91 |
|  | Submit final Plan for Prevention of<br>Contaminant Dispersion | 22 Jul 91 |

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|  |           |
|--|-----------|
| Submit final Plan Discharge Limits Radionuclides | 16 Sep 91 |
| Submit final PPCD and Responsiveness Summary     | 25 Nov 91 |
| Submit draft Historical Release Report           | 08 Jan 92 |
| Submit Responsiveness Summary for DLRP           | 31 Jan 92 |
| Submit final Historical Release Report           | 03 Jun 92 |
| Submit Annual Treatability Study Report          | 08 Mar 93 |
| Submit Sitewide Annual Treatability Study        | 14 Mar 94 |

### Future IAG Milestones Through FY95

| <u>Milestone Name</u>              | <u>IAG Date Scheduled</u> | <u>Extension Status</u> | <u>Planned Accomplishment Date</u> |
|------------------------------------|---------------------------|-------------------------|------------------------------------|
| Sitewide Annual Treatability Study | 14 Mar 95                 |                         | 14 Mar 95                          |

### March Work Activity Status

#### Sitewide Activities

##### Sitewide Treatability Studies

**Annual Report** - This project was finalized with the delivery of the final Annual Report for Treatability Studies Program FY93 to CDH and EPA - Region VII on March 14, its IAG deliverable date.

**Magnetic Separation** - Analytical results for the project were received on March 28, 1994. Following analyses of these initial tests, the Phase 2 test series will be established at a meeting tentatively scheduled at Los Alamos National Laboratory (LANL) for the week of April 4, 1994.

**Potassium Ferrate Process (TRU/Clear)** - The second revision of the Potassium Ferrate Treatability Study Work Plan was submitted to EPA and CDH on March 1, 1994. Comments were received on March 14, 1994. The Work Plan will be revised and submitted for final approval after all comments are received. Test work will begin in the Building 881 laboratories as soon as the data evaluation on the RF ground waters is complete and sample ground waters are chosen.

##### Other Sitewide Operations

**Administrative Record (AR)** - DOE held a meeting with EG&G to discuss the AR and to obtain some of the approved document review lists. The following resolutions

were reached: 1) DOE will send a letter to EPA and CDH informing them that EG&G will contact them directly to arrange record capture on a quarterly basis; 2) EG&G will complete a records capture of DOE records by March 18, 1994 (this resolution was accomplished on time); 3) Administration of the AR lies with EG&G while final responsibility for the contents lies with DOE; and, 4) A list of potential AR documents will be routed on a regular basis to EG&G before submittal of the quarterly update of the record. DOE will receive a quarterly update list of AR documents for review and approve.

**Community Relations** - Community Relations supported the IAG renegotiations efforts with public meetings, public involvement, and comment periods.

The Environmental Quarterly meeting was held March 23, 1994, and topics discussed included OU 2, OU 4, and OU 16 updates.

**IA Industrial Area Interim Measure/Interim Remedial Action Plan** - A preliminary draft of the IA IM/IRAP Environmental Assessment DD was delivered to the regulatory agencies on March 15, 1994.

**Decontamination and Decommissioning** - DOE gave EG&G notification that removal of Building 788 and closure of RCRA Units 21 and 48 will be included in the scope of the OU 4 Remediation Program and that all information required to authorize this work be included in the OU 4 IM/IRA EA DD.

## SECTION 3.0 ROUTINE ENVIRONMENTAL MONITORING

The following generalized sampling schedule for Routine Environmental Monitoring is provided as requested in Section 210 of the IAG. Detailed quarterly monitoring schedules are prepared in advance and are available to EPA and CDH upon request from the Environmental Management Department and EG&G Rocky Flats, Inc. The schedules are lengthy; therefore, they are not reproduced here. An EPA or State-authorized representative may make arrangements to observe fieldwork and to obtain split or duplicate samples.

### 3.1 SURFACE WATER AND SEDIMENTS

- Each of the Surface Water Stations (approximately 20 stations) are sampled quarterly.
- Each of the Sediment Stations (approximately 10 stations) are sampled quarterly.
- Each surface water and sediment sample is analyzed for the following parameters:

|                          |               |
|--------------------------|---------------|
| CLP TCL-VOA              | Radionuclides |
| Metals CLP TAL & Non-TAL | Temperature   |
| Field Parameters         | TDS/TSS       |
| Specific Conductivity    | pH            |
| Dissolved Oxygen (DO)    | Nutrients     |
| Major Anions             |               |

- Additionally, sediment samples are analyzed for: CLP-Semi VOAs, CLP-Pesticides/PCBs Herbicides-619

### 3.2 SOILS

- Each of the Soil Stations (located at 1- and 2-mile radii from the plant center) are sampled annually.
- Each soil sample is analyzed for plutonium and americium.

### 3.3 GROUND WATER

A total of 410 Ground water Stations are sampled quarterly; including RCRA, CERCLA, Plant Protection Boundary wells. Approximately one third of the wells are monitored monthly for water levels. Each ground water sample is analyzed for the following parameters:

**DOE, Rocky Flats Plant**

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Radiochemical Parameters

Gross Alpha  
Gross Beta  
Plutonium  
Americium  
Strontium  
Tritium  
Uranium  
Cesium

Inorganic Parameters

Nitrate/Nitrite  
Total Phosphorous  
Ortho-Phosphate  
Ammonia  
TDS  
Chlorine  
Fluorine  
Sulfate  
Carbonate  
Bicarbonate  
TSS  
Dissolved CLP & additional metals  
Cyanide  
CLP Volatile Organic Constituents

Field Parameters

Specific Conductivity  
Temperature  
Turbidity  
pH

**SECTION 4. CONTRACTOR/SUBCONTRACTOR IDENTIFICATION**

Contractors and subcontractors being used on the RF ER Program and the work they are performing are identified on the following list as required by paragraph 13 of the IAG.

| <u>OU</u> | <u>Project</u> | <u>Subcontractor</u> | <u>Sub-Subcontractor</u> | <u>Work Description</u>  | <u>Start Date</u> |
|-----------|----------------|----------------------|--------------------------|--|-------------------|
| 1         | Assessment     | Ebasco               | Dames & Moore            | CMS/FS Report  | Jan 92            |
| 1         | Assessment     | Dames & Moore        |                          | Public Health Evaluation   | Apr 93            |
| 1         | Assessment     | Roy F. Weston        |                          | Revise RI Report, respond to agency comments   | Feb 93            |
| 1         | Assessment     | S.M. Stoller         |                          | Environmental Evaluation   | Apr 93            |
| 1         | Remediation    | Resource Tech.       |                          | B-891 Treatment System Operations Group, Inc. (RTG)  |                   |
| 2         | Assessment     | Woodward-Clyde       |                          | OU 2 RFI/RI Work Plan (alluvial and bedrock) and RI field work (drilling, well completion/development) | Sep 90            |
| 2         | Assessment     | Ebasco               | S.M. Stoller             | Environmental Evaluation   | Feb 91            |
|           | Assessment     | Woodward-Clyde       | Layne                    | OU 2 RFI/RI Work Plan (bedrock), surficial soils   | Mar 93            |
| 2         | Remediation    | RT6                  |                          | Installation and operation of the water treatment system for South Walnut Creek Phase of OU 2 IRA      | Jan 91            |
| 3         | Assessment     | IT Corporation       | CH2M Hill                | OU 3 Field Work and RI Report  | Apr 92            |
| 3         | Assessment     | MRI                  |                          | Wind Tunnel/Soil Resuspension Study  | Aug 92            |
| 4         | Remediation    | HNUS Services        | Halliburton Spec         | Demobilize   | Sep 91            |
| 4         | Assessment     | Parsons/Eng Science  | Rust I&E                 | Implement the Phase I RFI/RI Work Plan, includes drilling, sampling radiation surveys, etc.            | Aug 92            |
| 4         | Remediation    | Parsons/ Eng Science |                          | Development of IM/IRA DD & conceptual design   |                   |
| 4         | Remediation    | ERM-Rocky Mountain   | Geraghty & Miller        | Post-closure monitoring plan   | Nov 93            |

**DOE, Rocky Flats Plant**

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| <u>OU</u> | <u>Project</u> | <u>Subcontractor</u>  | <u>Sub-Subcontractor</u>                   | <u>Work Description</u>   | <u>Start Date</u> |
|-----------|----------------|---|--|---|-------------------|
| 5         | Assessment     | ASI<br>Blackhawk Geo<br>Walsh<br>& Assoc.<br>Layne Envir. Service<br>S.M. Stoller<br>Adv. Terra Testing | Dames & Moore<br><br>Utility Mgmt. Service | Implementation of OU 5 Work Plan (excluding EE)                                     | Jun 92            |
| 5         | Assessment     | S.M. Stoller  |  | Implementation of EE section of OU 5 Work Plan                                      | Sep 92            |
| 6         | Assessment     | Woodward-Clyde  | Lane, Ogden, Geo<br>Environmental          | OU 6 RFI/RI Work Plan and Quality Assurance Addendum                                | Aug 92            |
| 6         | Assessment     | S.M. Stoller  |  | Implementation of EE section of OU 6 Work Plan                                      | Sep 92            |
| 7         | Assessment     | S.M. Stoller  | Walsh & Assoc.                             | OU 7 revised Work Plan Development and implementation. IM/IRA DD Development.       | Nov 92            |
| 8         | Assessment     | Jacobs Eng.   | Walsh & Assoc.                             | Implement the Phase I RFI/RI Work Plan for nonintrusive field work . for the IA OUs | Aug 93            |
| 9         | Assessment     | Jacobs Eng.   | Walsh & Assoc.                             | Implement the Phase I RFI/RI Work Plan for nonintrusive field work . for the IA OUs | Aug 93            |
| 10        | Assessment     | Jacobs Eng.   | Walsh & Assoc.                             | Implement the Phase I RFI/RI Work Plan for nonintrusive field work . for the IA OUs | Aug 93            |
| 11        | Assessment     | S. M. Stoller   |  | Implement the RFI field work and report writing.                                    | Jan 94            |
| 12        | Assessment     | Jacobs Eng.   | Walsh & Assoc.                             | Implement the Phase I RFI/RI Work Plan for nonintrusive field work . for the IA OUs | Aug 93            |
| 13        | Assessment     | Jacobs Eng.   | Walsh & Assoc.                             | Implement the Phase I RFI/RI Work Plan for nonintrusive field work . for the IA OUs | Aug 93            |
| 14        | Assessment     | Jacobs Eng.   | Walsh & Assoc.                             | Implement the Phase I RFI/RI Work Plan for nonintrusive field work . for the IA OUs | Aug 93            |
| 15        | Assessment     | ERM-Rocky Mtn.  | G.S. Miller, Inc.                          | Implementation of the RFI/RI Work Plan  | Mar 93            |

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**Contractor/Subcontractor Identification**

| <u>OU</u> | <u>Project</u> | <u>Subcontractor</u>      | <u>Sub-Subcontractor</u> | <u>Work Description</u>  | <u>Start Date</u> |
|-----------|----------------|---------------------------|--------------------------|--|-------------------|
| SW        | HRR            | IT Corporation            | Doty & Assoc.            | Prepare HRR  | Feb 91            |
| SW        | Adm. Record    | QuantaLex                 |                          | Maintain IAG Administrative Record                                     | Oct 90            |
| SW        | Geo. Char.     | Jacobs Eng.               |                          | Well Abandonment and Replacement                                       | Mar 93            |
| SW        | Geo. Char.     | Colorado State University |                          | Support M.S. thesis of Structural Geology, of Front Range Area Near RF | Nov 91            |
| SW        | Geo. Char.     | S.M. Stoller              |                          | Prepare 1992 Annual RCRA Report and Addendum                           | Jan 93            |
| SW        | Geo. Char.     | Colorado School of Mines  |                          | Masters level training program in ES and Engineering                   | Aug 92            |
| SW        | Geo. Char.     | Woodward-Clyde            |                          | Support for the SSWMS  | Feb 93            |
| SW        | Geo. Char.     | Colorado State University |                          | Sequential Extraction  | April 92          |
| SW        | Geo. Char.     | University of Colorado    |                          | Soil Monitoring Vadose Zone  | Jun 92            |
| SW        | Geo. Char.     | S.M. Stoller              |                          | Spatial Analysis/Computer Support                                      | Mar 93            |
| SW        | Geo. Char.     | Woodward Clyde            | SAIC/Wright Water        |  | Jan 93            |
| SW        | Monitoring     | IT Corporation            |                          | Analytical Services for ground water, surface water, and sediment      | Jul 90            |
| SW        | QA             | SAIC                      |                          | Develop and implement QA program and field operations oversight        | Dec 90            |
| PM        | Support        | S.M. Stoller              |                          | Program Management Support   | Oct 92            |
| PM        | QA Support     | SAIC                      |                          | Provide QA/QC support to ER Program                                    | Nov 92            |

## ACRONYMS

|        |   |
|--------|---|
| ADS    | Activity Data Sheet   |
| AIP    | Agreement In Principle  |
| ALARA  | As Low As Reasonably Attainable                                       |
| AOC    | Area of Concern   |
| ARAR   | Applicable or Relevant and Appropriate Requirements                   |
| ASRP   | Accelerated Sludge Removal Project                                    |
| BAT    | Best Available Technology   |
| BCP    | Baseline Change Proposal  |
| BIO    | Basis for Interim Operations  |
| BOA    | Basic Ordering Agreement  |
| BRAP   | Baseline Risk Assessment Plan   |
| CAD    | Computer Aided Design   |
| CAMU   | Corrective Action Management Unit                                     |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CHWA   | Colorado Hazardous Waste Act  |
| CMS    | Corrective Measures Study   |
| COC    | Contaminant Of Concern  |
| CPT    | Cone Penetrometer Testing   |
| CRP    | Community Relations Plan  |
| CSU    | Colorado State University   |
| CX     | Categorical Exclusion   |
| DAC    | Derived Air Concentration   |
| DD     | Decision Document   |
| D&D    | Decontamination & Decommissioning                                     |
| DCN    | Document Change Notice  |
| DLRP   | Discharge Limits Radionuclides Plan                                   |
| DM     | Draft Modification  |
| DNAPL  | Dense Non-Aqueous Phase Liquids                                       |
| DOE    | Department of Energy  |
| DQO    | Data Quality Objectives   |
| DVP    | Data Validation Plan  |
| E&WM   | Environmental and Waste Management                                    |
| EA     | Environmental Assessment  |
| EE     | Environmental Evaluation  |
| EM     | Environmental Management  |
| END    | Environmental NEPA Division   |
| EPA    | Environmental Protection Agency                                       |
| EQS    | Environmental Quality Support   |
| ER     | Environmental Restoration   |
| ERA    | Ecological Risk Assessment  |
| ESE    | Environmental Science and Engineering                                 |
| FFCA   | Federal Facilities Compliance Act                                     |
| FI     | Facility Investigation  |
| FIDLER | Field Instrument for Detection of Low Energy Radiation                |
| FS     | Feasibility Study   |
| FSP    | Field Sampling Plan   |

|        |   |
|--------|---|
| FTU    | Field Treatability Unit                         |
| FYP    | Five-Year Plan                                  |
| GAC    | Granular Activated Carbon                       |
| GIS    | Geographic Information System                   |
| GPR    | Ground Penetrating Radar                        |
| GPS    | Global Positioning System                       |
| H&S    | Health and Safety                               |
| HSP    | Health and Safety Plan                          |
| HAP    | Health Advisory Panel                           |
| HGMS   | High Gradient Magnetic Separation               |
| HHRA   | Human Health Risk Assessment                    |
| HPGe   | High Purity Germanium                           |
| HQ     | Headquarters                                    |
| HRR    | Historical Release Report                       |
| IA     | Industrial Area                                 |
| IAG    | Interagency Agreement                           |
| ICP-MS | Inductively Coupled Plasma Mass Spectrometer    |
| IDM    | Investigative Derived Material                  |
| IHSS   | Individual Hazardous Substance Site             |
| IM     | Interim Measure                                 |
| IRA    | Interim Remedial Action                         |
| IRAP   | Interim Remedial Action Plan                    |
| ITS    | Interceptor Trench System                       |
| IWCP   | Integrated Work Control Package                 |
| IX     | Ion Exchange                                    |
| LANL   | Los Alamos National Laboratory                  |
| LATO   | Los Alamos Technology Office                    |
| LL     | Low-level                                       |
| LLMW   | Low-level Mixed Waste                           |
| mg/l   | milligrams per liter                            |
| MOU    | Memorandum of Understanding                     |
| MTS    | Master Task Subcontract                         |
| MSVEU  | Mobile Soil Vapor Extraction Unit               |
| NAJD   | No Action Justification Document                |
| NAPLs  | Non-Aqueous Phase Liquids                       |
| NEPA   | National Environmental Policy Act               |
| NOV    | Notice of Violation                             |
| NTS    | Nevada Test Site                                |
| NPDES  | National Pollution Discharge Elimination System |
| O&M    | Operations and Management                       |
| OPWL   | Original Process Waste Line                     |
| ORR    | Operational Readiness Review                    |
| OTD    | Office of Technology Development                |
| OU     | Operable Unit                                   |
| PA     | Protected Area                                  |
| PAC    | Potential Area of Concern                       |
| ppb    | Parts per billion                               |
| PCB    | Polychlorinated biphenyl                        |
| PCCB   | Plant Change Control Board                      |
| PCP    | Process Control Plan                            |

|       |   |
|-------|---|
| PIT   | Process Improvement Team                      |
| PP    | Proposed Plan                                 |
| PPCD  | Plan for Prevention of Contaminant Dispersion |
| PPE   | Personal Protective Equipment                 |
| PRG   | Preliminary Remediation Goals                 |
| PU&D  | Property Utilization and Disposal             |
| QA    | Quality Assurance                             |
| QAPjP | Quality Assurance Project Plan                |
| QAPP  | Quality Assurance Project Plan                |
| QP    | Quality Plan                                  |
| RAGS  | Risk Assessment Guidance for Superfund        |
| RCA   | Radiological Control Area                     |
| RCRA  | Resource Conservation and Recovery Act        |
| RFEDS | Rocky Flats Environmental Database System     |
| RFI   | RCRA Facilities Investigation                 |
| RF    | Rocky Flats                                   |
| RI    | Remedial Investigation                        |
| ROD   | Record of Decision                            |
| RPT   | Radiological Protection Technician            |
| RS    | Responsiveness Summary                        |
| SAP   | Sampling and Analysis Plan                    |
| SAR   | Safety Analysis Report                        |
| SEP   | Solar Evaporation Ponds                       |
| SID   | South Interceptor Ditch                       |
| SMO   | Sample Management Office                      |
| SOP   | Standard Operating Procedure                  |
| SOW   | Statement of Work                             |
| SPPO  | Solar Ponds Program Office                    |
| STP   | Sewage Treatment Plant                        |
| SVE   | Soil Vapor Extraction                         |
| SVS   | Soil Vapor Survey                             |
| SW    | Surface Water                                 |
| TA    | Technical Area                                |
| TCE   | Trichloroethene                               |
| TDS   | Total Dissolved Solids                        |
| TIE   | Technology Information in Exchange            |
| TM    | Technical Memorandum                          |
| TMST  | Temporary Modular Storage Tanks               |
| TRG   | Technical Review Group                        |
| TSR   | Treatability Study Report                     |
| TSS   | Total Suspended Solids                        |
| UBC   | Under Building Contaminations                 |
| USFWS | United States Fish and Wildlife Service       |
| UV    | Ultraviolet                                   |
| VOA   | Volatile Organic Analyte                      |
| VOC   | Volatile Organic Compound                     |
| WBS   | Work Breakdown Structure                      |
| WS    | Waste Solidification                          |